

Running Head: VULNERABLE POPULATIONS

Vulnerable Populations,  
Planning for Their Needs Before, During and After a Disaster

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### CERTIFICATION STATEMENT

I hereby certify that this paper constitutes my own product, that where the language of others is set forth, quotation marks so indicate, and that appropriate credit is given where I have used the language, ideas, expressions, or writings of another.

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## Abstract

The City of Pompano Beach Fire Rescue has committed to assisting in making the City of Pompano Beach one of the safest city's of its size. The problem was that the City of Pompano Beach did not have a disaster plan that was inclusive of the special needs of the city's vulnerable population, placing them at added risk of injury and death before, during and after a disaster. The purpose of this research paper was to identify the needs of the city's vulnerable population during a disaster and improve the current disaster plan to include addressing those needs. The study used the descriptive research method to address the following questions: What was the accepted definition of vulnerable population in the fire rescue/emergency management industry at the local, state and federal levels? The research also sought to determine what, if any were the different needs of the vulnerable population during a disaster and why was it important for an organization to identify these needs? The third research question sought to determine what resources were available at a local, state, or federal level to provide services to the vulnerable population during a disaster? Question four sought to ascertain what have other organizations done to provide for the needs of their vulnerable populations before, during and after a disaster? The final question sought to determine what evidence was there that the vulnerable population's needs were being met or not during disasters? Surveys and interviews were conducted with individuals in various levels of government dealing with the vulnerable population and special interest groups representing vulnerable populations. The results indicated that there were still many differences among organizations on how to deal with the vulnerable population during a disaster. The recommendations contained in this paper were specific to Pompano Beach in order to attain its purpose, improving its emergency operations plan and may not apply to all organizations.

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## Introduction

Disasters, whether natural or manmade have occurred for many years. The problem is that the City of Pompano Beach does not have a disaster plan that is inclusive of the special needs of the city's vulnerable population, placing them at added risk of injury and death before, during and after a disaster. This increased risk of injury and death has contributed to preventing the City of Pompano Beach from achieving one of its goals of becoming the safest city of its size, as stated in the fire department's 2005 Strategic Plan (Small, 2005). The purpose of this research paper is to identify the needs of the city's vulnerable population during a disaster and improve the current disaster plan to include addressing these needs.

Normally, in the United States, the task of mitigating disasters has typically fallen on the fire service of the jurisdiction in which the disaster occurred. Depending on the size and type of disaster, additional resources and responsibilities may be utilized from both state and federal agencies (Bascetta, 2006). Each disaster that has occurred has brought with it its own unique set of challenges, however there are also certain things about all disasters that are common, regardless of what and where the disaster occurred. All disasters present the opportunity to learn from the experiences of the fire rescue organizations or emergency services organizations forced to mitigate the emergency.

The generally accepted comprehensive model in emergency management for handling emergency disasters consists of four phases which are response, recovery, mitigation, and preparedness (Canton, 2007). An essential component of the preparedness phase is planning. Planning often takes its form in many different ways from pre-planning, to the planning section of an incident. Good planning, whether it is in advance of an incident or the planning required

for mitigating an incident are essential to an organization's ability to successfully manage an incident. Planning for the needs of the vulnerable population in one's community before, during and after an incident is important to the successful management of a disaster.

This study used the descriptive research method to address the following questions:

What is the accepted definition of vulnerable population in the fire rescue/emergency management industry at the local, state and federal levels? Surveys and interviews were conducted with individuals in various levels of government dealing with the vulnerable population. The research also sought to determine what, if any were the different needs of the vulnerable population during a disaster and why was it important for an organization to identify these needs? Surveys and interviews were conducted with individuals considered part of the vulnerable population as well as fire rescue/emergency management organizations. The third research question in this research paper sought to determine what resources are available at a local, state, or federal level to provide services to the vulnerable population during a disaster? The researcher utilized a descriptive research method in order to obtain information to answer question three. Surveys and interviews were conducted with individuals in various levels of government dealing with the vulnerable population to gather data. Question four sought to ascertain what have other organizations done to provide for the needs of their vulnerable populations before, during and after a disaster? This question was also answered as a result a descriptive research method and surveys and interviews were conducted with both local and other organizations regarding their methods of providing for the needs of their vulnerable population. The final question sought to determine what evidence was there that the vulnerable population's needs were being met or not during disasters? Surveys and interviews were

conducted with individuals in various levels of government dealing with the vulnerable population and special interest groups representing vulnerable populations.

### Background and Significance

A review of the City of Pompano Beach's past comprehensive emergency management plans revealed that they included very little, if any planning for special needs considerations of the city's vulnerable population (Spill, 2004). Presently, the comprehensive emergency management plan is under review with the intent of improving areas of deficiency, such as the ability to provide service to the vulnerable population during an emergency. In the future, the revised and improved emergency management plan will hopefully include provisions to better address the needs of all segments of vulnerable population in Pompano Beach (Spill, personnel communication, May 5, 2010).

Planning for the challenges presented to an organization during a disaster in order to deal with their vulnerable populations can be a daunting task. Florida leads the nation in the number of elderly, homeless, and medically disabled, which by some definitions can all be considered part of the vulnerable population (Florida Department of Health, 2009). According to data from the 2009 Broward County Vulnerable Population Profile, 14% of Broward County's population is over the age of 65 years old compared to 12.4% for the rest of the nation (Ballen, 2009). There are 48,258 people over the age of 85 in Broward County (Florida Department of Health, 2009). Twenty per cent of the U.S. population over 65 years old report some form of disability (Ballen, 2009). Pompano Beach, which is located in Broward County and is the fifth largest city in Broward County is home to a large percentage of these vulnerable people.



In 2001 Pompano Beach Fire Rescue underwent an organizational change at the Fire Administration level. The previous Fire Chief retired after 10 years of service and was replaced by the then Assistant Fire Chief. A significant undertaking that was implemented by the incoming Fire Chief was to conduct an annual strategic planning session with staff and fire department personnel. During the 2005 strategic planning session, one of the high priority goals for the future that was indentified was to make the City of Pompano Beach one of the safest communities of its size for all who worked or lived there (Small, 2005). Part of this goal was to identify and provide better service to the vulnerable population of Pompano Beach, both during a disaster situation as well as in everyday service.

The establishment of a new position and division within the fire department called, The Office of Emergency Management was one of the cornerstones of the strategic plan. A newly budgeted position, Emergency Manager, was created in 2007 to lead this division and address the many issues of preparation for dealing with disasters, including the vulnerable population of Pompano Beach. The significance of the goal was identified as an opportunity in the department's SWOT analysis and a high priority in the department's strategic plan (Small, 2005).

Pompano Beach Fire Rescue is located in the South Florida area and serves an urban community of approximately 101,000 residents, fifth largest city in Broward County. The city is bordered on the east by the Atlantic Ocean and on its western boarder by the Florida Turnpike. The geographic area serviced is approximately twenty two square miles. Of significant importance regarding portions of the breakdown of the land use in Pompano Beach is that 34.6% is residential, 10.3% commercial, 15.3% industrial areas, and 6.2% institutional. The remaining portions 6.4% utilities and 27.2% for transportation, water, and recreational use are not

applicable to this research. There are a significant number of both commercial and residential high rise buildings (285 high-rise structures) located throughout the city, many which house portions of the vulnerable population. In addition to the 285 high-rise buildings in the city, Pompano Beach has 3,382 multi-family dwellings. A very diverse, urban community such as this provides many unique challenges that one must attempt to deal with when attempting to provide emergency services to the vulnerable population during a disaster. It is also significant to note that the type of community and location of Pompano Beach at the southern end of the Florida peninsula makes it very susceptible to natural disasters, such as hurricanes and excessive flooding. In addition the many interstate highways, railways, and industries in the city increase the likelihood of an industrial or manmade disaster.

One of the more recent disasters that Pompano Beach Fire Rescue was forced to deal with was Hurricane Wilma, which struck in 2004. A search of the Pompano Beach Fire Department records management system attributed 289 requests for assistance to segments of the vulnerable population during Hurricane Wilma, many of which could have been handled better. There were hundreds of additional requests for service after the storm from individuals considered part of the vulnerable population that overwhelmed the system.

Prior to Hurricane Wilma striking Pompano Beach, very little attention or resources had been directed to dealing with the various segments of the vulnerable populations from a planning standpoint. In the past, the vulnerable population segment of society was not considered any differently than the rest of the citizenry. Lessons learned during Hurricane Wilma forced the organization to recognize the need for change in the future regarding dealing with the vulnerable population.

As previously mentioned, a large number of elderly and disabled people live in Broward County in general and the City of Pompano Beach specifically. This is significant in that during a disaster, all of these individuals will require services above and beyond what typically is provided to individuals. This increase and additional need for services will place additional demands on departments, especially if they have not planned and prepared for the demands.

Pompano Beach Fire Rescue is a full time, paid career department with a staffing level of 197 firefighters, 33 ocean rescue lifeguards, and one Emergency Manager for a total of 231 employees. Annually, the department responds to approximately 26,000 calls for service, with the majority of the requests (78%) being for medical emergencies. The remaining requests for service are for structure fires, alarms and various other emergencies. The department responds from 7 stations located throughout the city, as well as provides ocean rescue and beach protection service.

This research project relates to information taught in unit four of the Executive Analysis of Fire Services Operations in Emergency Management course, specifically data gathering (NFA course manual p-26, 2009). This research project also relates to United States Fire Administration (USFA) operational objective “to respond appropriately in a timely manner to emerging issues” (Executive Fire Officer Program ARP Guidelines, 2005 p II-2) by identifying an issue on a local level and exposing it so others could learn from the information.

### Literature Review

The purpose of this literature review is to examine and summarize the research findings of others regarding the challenges that other organizations and individuals faced with regards to planning and preparing for dealing with segments of the vulnerable populations before, during,

and after a disaster. Specifically, the review examined information in the areas of historical data (lessons learned) from other organizations during disasters, planning procedures before, during and after disasters, and policies and procedures regarding disaster planning for the vulnerable populations, all of which ultimately addressed the paper's various research questions noted above.

Often it is beneficial to look at the past in order to improve for the future. This method of improvement has proven to be very successful in the field of emergency preparedness. In an article written for The Association of State and Tribal Health Officials (Association of State and Territorial Health Officials, 2008), it was noted that the United States government learned while preparing for the potential H5N1 pandemic disaster the importance and benefits of devoting additional attention and resource to those who needed special assistance, especially the elderly segment of the vulnerable population (Association of State and Territorial Health Officials, 2008). In February 2007, the Center for Disease Control published a draft version of *Public Health Workbook to Define, Locate and Reach Special, Vulnerable, and At-Risk Populations in an Emergency* (Center for Disease Control, 2007). It was this document that finally marked the first federal-level guidance to assist states, territories, and local governments in their planning for vulnerable populations (Association of State and Territorial Health Officials, 2008). Prior to this document being published, most other organizations were working to develop their own procedures, tools, and practices to provide and assist vulnerable populations during a disaster. State and local governments are normally initially responsible for disasters occurring in their jurisdiction. Once the local jurisdiction becomes overwhelmed in their response to the disaster, then the federal government is permitted to bring their resources to bear (Bascetta, 2006).

Hurricane Katrina, which was one of the most devastating and expensive natural disasters in the history of the United States, has provided a wealth of knowledge to learn from in all aspects of emergency planning, but specifically caring for the vulnerable population before, during, and after a disaster. As a result of the Hurricane Katrina Disaster, emergency preparedness planners have begun to understand the importance of communicating with advocates from the older adult and vulnerable population communities (Aldrich, & Benson, 2008). Emergency managers understand the importance of working with the vulnerable populations prior to disasters to learn what their needs might be.

Many of the tragedies and lessons learned from Hurricane Katrina dealt with the elderly segment of the vulnerable population and evacuations. Approximately 75% of all the reported deaths from Hurricane Katrina in New Orleans occurred among the elderly population of the city (Wingate, Perry, Campbell, Prabu, & Weist, 2007). As the storm approached New Orleans, the majority of the 280 nursing homes in the city remained full, unable to evacuate even though there were hundreds of school buses available to transport the patients, but no bus drivers (Wingate, Perry, Campbell, Prabu, & Weist, 2007). In addition the buses were not equipped to transport elderly patients who needed to use wheel chairs or other medical devices (Wingate, Perry, Campbell, Prabu, & Weist, 2007).

Historically nursing facilities, which typically house a large portion of the vulnerable population, have not been included in the pre-planning stages of disaster planning, which was the case with the nursing homes in New Orleans (Wingate et al., 2007). These nursing facilities are often overlooked as a health resource and are considered to usually be unprepared to deal with the disaster (Saliba, Buchanan, Kington, 2004). In a report on nursing homes preparedness by Siliba et al. (2004), it was noted that of the 87 nursing homes that implemented their disaster

plans for various emergencies, 56 of those nursing homes cited problems with staffing, communications, lack of power sources, and lack of water. Prior to Hurricane Katrina, an entire city had never been evacuated before affecting the nursing homes in the city. During the evacuation of New Orleans many nursing homes had inadequate or even non implemented evacuation plans (Sullivan, H. Hakkinen, M, 2004). One of the primary factors affecting the evacuation were the resources available, type and number of patients in the nursing home, and finally the population density of the community that the nursing home was in, as well as the ability or lack thereof, of the government to provide for the vulnerable population (Siliba et al., 2004).

A review by the National Organization on Disability revealed that many of the shelters and facilities did not have pre existing contracts with disability and aging organizations. Nursing homes that accepted additional patients often times did not have the staff to provide care (Ringel, Chandra, Leuschner, & Lim, 2007). Facilities that were part of a larger chain had greater success in transferring their patients due to the ability of being able to transfer patients within their system (Ringel, Chandra, Leuschner, & Lim, 2007). Ironically, to receive federal funding through Medicare and Medicaid, nursing homes must maintain emergency evacuation plans as part of their accreditation. The Joint Commission on Accreditation of Healthcare Organizations (JCAHO) also requires evacuation plans prior to accreditation.

Very few communities in New Orleans had evacuation plans that included specific plans for institutionalized and vulnerable populations which require additional assistance and resources. Learning from New Orleans's mistakes, many other governments around the country began working with various organizations and preparing contracts in advance to address the needs and risks of the vulnerable population (Bollig, & Lynn, 2006). Normally, the agencies that

had emergency plans that were well thought out and held regular and detailed training among their selves and other agencies handled large scale emergencies better than those that did not prepare (O'Brien, 2003). With that being said, many emergency management officials on the federal and state level still have not prepared plans to ensure that nursing homes are evacuated in the event of an emergency (Frieden, 2006). This is partially due to the fact that state and federal governments are not strictly responsible for the evacuation of private nursing homes (Frieden, 2006).

The literature review also included a review of information on the planning portion of dealing with the vulnerable population before, during, and after a disaster. The vulnerable population often times have needs that are not completely addressed by traditional planning for disasters (Wingate, Perry, Campbell, Prabu, & Weist, 2007). In an attempt to improve responders and emergency planners' ability in planning and response to the vulnerable populations to various disasters, the Center for Disease Control and Prevention (CDC) established the Centers for Public Health Preparedness in 2000. This group formed the Vulnerable Population Collaboration Group in 2005-2006 that formulated plans to meet the needs of the vulnerable populations that were not being met by the traditional planning methods of the emergency planners (Wingate, Perry, Campbell, Prabu, & Weist, 2007).

The National Organization of Disability's (NOD) Emergency Preparedness Initiative noted the importance of planning partnerships with the disability community before a disaster occurs to identify and meet the needs of the vulnerable population (Davis, 2009). The NOD also pointed out the additional benefit of partnerships was that it helped involve people with disabilities in planning. Finally, NOD commented, "the most effective way to view emergencies through the eyes of people with disabilities is to involve community members with disabilities in

the planning and preparation process, including drills and exercises” 2009. This approach is reiterated by FEMA in their Comprehensive Emergency Guide 301, in which they stress the importance that each jurisdiction has a distinct vulnerable population that it must identify, know and plan for before a disaster (Department of Homeland, 2008). This strategy also allows for the maximizing of resources (Department of Homeland, 2008).

In a review of the planning for evacuations of the vulnerable population during a disaster by the Government Accounting Office (Bascetta, 2006) they noted that often times various segments of the vulnerable population are transportation disadvantaged (Bascetta, 2006). In a study of the vulnerable population evacuated during Hurricane Katrina respondents were asked about reasons for not evacuating, lack of transportation and underestimation of the storm were some of the main reasons for not evacuating (Brodie, Weltzein, Altman, Blendon, & Benson, 2006). Brodie et al. (2006) noted that more than one third (34%) reported lack of a car or other means of evacuating as the main reason for not evacuating prior to the arrival of the storm. The transportation challenge that the vulnerable population presents is compounded by trying to identify their location and needs and planning for their coordinated response (Bascetta, 2006). This point was also stressed by Sproule when he noted that often times just identifying the vulnerable population and their needs goes unaddressed unless they, the vulnerable population, self-identify through a state register (Sproule, n.d.). Normally the responses to such issues are handled at the local and state level. Once the resources at the state and local level are overwhelmed then the federal government can assume a greater role in planning to provide services (Bascetta, 2006).

The involvement of federal resources for the vulnerable population in a disaster can range from providing such common things as food and water to housing to specialized medical care



and transportation (Department of Homeland, 2008). Another way that the Federal government can assist is through the National Disaster Medical System (NDMS). The NDMS is a partnership of four federal departments and is the primary federal program used to evacuate patients in need of hospital care during a disaster. It is important to understand and plan for the fact that this program is not intended to evacuate nursing homes. The NDMS is used in conjunction with state and local resources and was actually used during Hurricane Katrina to move 2900 patients (Bascetta, 2006).

A critical component of the planning portion of disasters and dealing with vulnerable populations is planning for evacuations, regardless of the type of disaster which may occur. One of the problems that should be anticipated is the fact that even when reliable information about a possible danger is provided, it is extremely difficult to warn a large population that does not perceive the threat as a true danger (Brodie, Weltzein, Altman, Blendon, & Benson, 2006). If for some reason the warning (communications) is not clear, then people will tend to even underestimate even more the threat and be less likely to evacuate.

In the Journal of Disability Policy Studies, White (2007) defines emergency planning as, “the actions taken before a disaster by responders and those directly affected that enable proactive engagement of social units when the disaster occurs”. An example of the result of poor planning is the fact that those who for physical reasons are unable to escape from a disaster are disproportionately negatively affected by the disaster (White, 2007). Information from a study done at the University of Kansas called the Nobody Left Behind Project used empirical and surveillance data of vulnerable populations that were confined to wheel chairs to determine if they were considered when disaster plans were compiled (Page, 2005). The study of 30 randomly selected counties where disasters had occurred found that emergency planners were

still not meeting the needs of the vulnerable populations during a disaster (Page, 2005). The survey also indicated that from a planning standpoint emergency managers still continue to have difficulty in identifying where various segments of the vulnerable population are located in their community and how to rescue them, as well as how to accommodate them once they are located (Page, 2005).

In addition, it is critical that during the planning stages the issue of knowing how to communicate with the vulnerable population is addressed. A recent study by the U.S. Government's National Council on Disability (NCD) finds awareness of the need for preparedness and planning combined with rehearsal and training in evacuation procedures and the availability of advance notification or warning has the potential to greatly minimize the number of people killed or injured in the vulnerable population during a disaster (Sullivan, H.T. & Hakkinen, M. T. 2006). The NCD also noted that "All too often in emergency situations the legitimate concerns of people with disabilities are overlooked or swept aside (National Council on Disabilities, 2009)." One of the findings of the investigations that followed Hurricane Katrina was that during a disaster, information must be presented in an accessible format to all individuals and that the broadcasters and emergency managers continue to fail in modifying their procedures to better communicate with the vulnerable populations (Sullivan, H.T. & Hakkinen, M. T. 2006).

The importance of properly planning for identifying and maintaining data on the vulnerable population through a variety of data collection methods was identified as critical function (Metz, Hewett, Muzzarelli, & Tanzman, 2002). Equally important is the need to keep the data current and updated as possible. One of the best ways to continue to update data bases is to continually request updated information through various outreach projects. Individuals with

special needs tend to self identify more often when there are repeated attempts to contact them through various programs (Metz, Hewett, Muzzarelli, & Tanzman, 2002). Emergency planner's efforts to identify and maintain current database information regarding the vulnerable population in their jurisdiction is vitally important (Metz, Hewett, Muzzarelli, & Tanzman, 2002). .

The literature review of the policy and procedures pertaining to providing for the vulnerable population before, during, and after a disaster was limited. Most of the more recent policy and procedure material, what little there was, dealt with lessons learned from Hurricane Katrina, more than likely since it was still the most recent significant disaster in the United States. It was noted that one of the keys to effective policy development is to do so when decision makers have the luxury of time to establish responsible policies (Hoffman, 2009). Although there is an ongoing understanding of the importance of disaster preparedness and policy development, when protocols are analyzed there are limited, but increasing references to vulnerable populations in the literature (Sullivan, H.T. & Hakkinen, M. T. 2006). Unfortunately, despite an overwhelming number of documents that recommended various policies be implemented regarding the vulnerable populations, few organizations and systems have included the vulnerable population in their planning and policy documents (Wingate, Perry, Campbell, Prabu, & Weist, 2007).

The establishing of effective policies and procedures by organizations that address the problems faced by the vulnerable populations regarding such issues as evacuations, sheltering, medical needs etc. must be done (Ballen, 2009). Rowland notes that standardized emergency preparedness policies and procedures to assist the various segments of the vulnerable population have not really been explored in the literature as far as examining the effectiveness of the policies and procedures for the vulnerable population (Rowland, White, Fox & Rooney, 2007).

Ideally, many of these issues could be addressed through the use of community based organizations, standard emergency practices, and well developed plans involving representatives from the community. The establishing of policies and procedures that routinely and regularly disseminate information on emergency planning several times a year is a wise practice (O'Brien, 2003).

Rowland's research also indicated that in the years preceding Hurricane Katrina most of the organizations they examined did not have adequate or specific policies for dealing with the vulnerable populations (Rowland, 2007). Some of the reasons cited in the Rowland's research for the lack of guidelines and policies included 67% stating that they did not have the funding, 33% lacked the personnel trained in this area. Even more shocking from Rowland's research was the fact that 17% stated that they would required more public education before they would consider the vulnerable population a priority and 25% would establish policies if FEMA or their state required them to do so (Rowland, 2007).

The literature review revealed that from a policy standpoint many organizations operated with different definitions of what the vulnerable population was in their community. The definitions can vary greatly between organizations and there is often little consensus on who should be included in the vulnerable population definition. Many groups that are included have little in common other than they are often left out of programs, services, and planning for disasters (Kailes & Enders, 2007).

Eddins noted that importance of defining special needs in order to develop disaster operational plans and policies (Eddins, n/d). Wingate broadly defined the vulnerable population as individuals that are not able to access and use the standard resources offered in a disaster response or situation for a variety of reasons (Wingate et al., 2007). The reasons could range

from age, medical disability, or mental disorder to name just a few. The Federal Government, in the National Response Framework (NRF) takes a functional approach to defining the vulnerable population (Department of Homeland Security, 2008). The National Response Framework defines special needs population as, “Population whose members may have additional needs before, during, and after an incident in functional areas, including but not limited to maintaining independence, communications, transportation, supervision, and medical care”. The State of Florida defines the vulnerable population as:

Groups whose unique needs may not be fully integrated into planning for disaster response. These populations include, but are not limited to, those who are physically or mentally disabled, blind, deaf, hard-of-hearing, cognitively impaired, or mobility challenged. Also included in this group are those who are non-English (or not fluent) speakers, geographically or culturally isolated, medically or chemically dependent, homeless, frail elderly and children (Florida Department of Health, 2009).

On a local level, the City of Pompano Beach Fire Rescue Disaster Plan does not currently have a definition for vulnerable population nor does Broward County (personal communication Spill and Hanzen, September 16, 2010). Ginny Hazen, the Emergency Coordinator for Broward County did state that that she felt that due to a previously settled ADA law suit, Broward County was extremely inclusive of many segments of the population considered vulnerable (Appendix L).

Kailes points out that from a policy standpoint a plan to deal with vulnerable populations should be built on five functions based needs, which are communication, medical needs, maintaining functional independence, supervision, and transportation (Kailes & Enders , 2007).

She also notes that typically the governmental policies that are developed for response systems are designed for people for whom being able to escape is based on their own ability to walk, run, drive, hear, or communicate (Kailes & Enders, 2007). We have seen, as in the case of Hurricane Katrina and other disasters that often times there are individuals who are not able to perform these functions.

One of the difficulties with the vulnerable populations during a disaster is identifying their location prior to the event so that one knows what resources to respond with appropriately to the scene. The use of GIS in policy development for dealing with the needs of the vulnerable population during a disaster can be invaluable (Kailes & Enders, 2007). Knowing ahead of time that certain areas are heavily occupied by segments of the vulnerable population and detailing that information by way of a GIS mapping system can be very helpful in response and deployment of resources (Kailes & Enders, 2007).

The GIS can play an important role in developing response policy and plans by identifying spatial differences (Kailes & Enders, 2007). Policy decisions on proper deployment of resources before, during, and after the disaster can be affected by data derived from GIS. Morrow identifies the importance and value of emergency management policy makers to identify the high risk populations and sectors of a community through the use of GIS and vulnerability mapping (2000). She goes on to mention the need for organizations to tailor their policies and plans to the needs of the communities they serve, including the vulnerable populations.

In summary, the literature indicated that there are various measures that organizations can begin to develop and implement with regards to providing for segments of the vulnerable populations before, during, and after a disaster. Examining the results of past disasters provides organizations the opportunity to evaluate the successes and mistakes made by other organizations

in dealing with the vulnerable populations. These evaluations then provide the opportunity to correct any mistakes and improve on any successes for others to learn from. The importance of planning and including all segments of the vulnerable population in the planning was well documented in the literature review, as was the need to identify and manage the locations of segments of the vulnerable populations. The literature also revealed that from a planning standpoint, the importance of having training sessions for dealing with the vulnerable population before an incident was vital in determining the future success of an organization's ability to be successful. It was also noted that during the development of training exercise, representatives from all aspects of the vulnerable population community must be involved, as well as in the actual training exercise itself if the procedures are expected to work during a real disaster. Much of the information reviewed was from lessons learned during the Hurricane Katrina disaster.

### Procedures

The intent of the research procedures was to obtain information and data from various sources in order to address the research questions previously noted and to develop recommendations. Descriptive research was the primary methodology used by the author.

The procedures used to gather and prepare the information for this research project began with an extensive literature review. The initial portion of the literature review was conducted at the Learning Resource Center at the National Emergency Training Center in December 2009. The literature review was continued for several months upon returning home at the Alvin W. Sherman Library at Nova Southeastern University in Fort Lauderdale, Florida and the Broward County Regional Library, also in Fort Lauderdale. The majority of all books, journals, and

research papers were retrieved from either the Learning Resource Center or the Alvin W. Sherman Library. Limited information was gathered from the Broward County Library in Fort Lauderdale, Florida and Florida Atlantic University in Boca Raton, Florida. Additional documentation was gathered from the internet.

Google was the main search engine utilized to access and retrieve information from the internet. Key words and phrases used during the internet searches included vulnerable populations, special needs populations, vulnerable populations and disaster preparedness, disaster preparedness, Hurricane Katrina and vulnerable populations, and vulnerable population studies. A secondary search engine, [www.ask.com](http://www.ask.com) was used to obtain general information pertaining to vulnerable populations and disaster preparedness. The same key words as mentioned above were used.

Four surveys were conducted in order to gather information for this research project. The first survey was a general survey of Emergency Managers (EM) of various fire departments or emergency services organizations in Broward County. The surveys were e-mailed to the emergency manager's e-mail addresses that were provided by Broward County Emergency Managers Committee. This survey (Appendix A) gathered general information and knowledge regarding the organizations policy and procedures, as well as other areas dealing with vulnerable populations. The second survey (Appendix C) was a survey that was sent out to all county emergency managers throughout the State of Florida. This survey was e-mailed to various emergency managers utilizing the e-mail addresses from the State of Florida site, Emergency Disaster.org and was located at [http://www.floridadisaster.org/fl\\_county\\_em.asp](http://www.floridadisaster.org/fl_county_em.asp). A third survey aimed at gathering similar information on a national level for comparison was sent out via the



internet to the Office of Emergency Management of each state in the United States. The e-mail addresses for each Office of Emergency Management were obtained by initially performing a search via Google. The search directed the researcher to the FEMA site at <http://www.fema.gov/about/contact/statedr.shtm> which provided addresses for all state offices.

Finally a fourth survey was sent to individual firefighters and organizations. This survey (Appendix G), was sent to 500 various individuals and fire departments throughout the country via the internet. The primary distribution methods for identifying who received the survey was personal e-mail lists, data (e-mail addresses) gathered during previous fire department related classes around the country, and personal contacts. An additional distribution method utilized for identifying others who received the survey was a link with the National Society of Executive Fire Officers, NSEFO ([www.nsefo.org](http://www.nsefo.org)). Individuals accessing the link at NSEFO were directed to the Survey Monkey website ([www.surveymonkey.com](http://www.surveymonkey.com)) where they completed the survey.

All individuals participating and responding to the internet surveys were also directed to the website called Survey Monkey ([www.surveymonkey.com](http://www.surveymonkey.com)) where they completed the survey. Individuals completed the survey via the internet and the results were tabulated. All individuals completing the surveys were required to provide demographic information including name and contact information. All survey questions and answers are contained in the appendix portion of this paper.

Each survey contained varying number of questions that were designed to capture information to address the research questions. The questions in the surveys were both open ended and closed questions with limited answers. The information was tabulated and compiled

percentage format for each closed ended question and the individual response was listed for each open ended question. The responses to the questions or the actual categories were not weighted. The surveys were completed on various days during 2010.

In addition to the surveys, several personal phone interviews were conducted between January 1<sup>st</sup>, 2010 and September 17, 2010. In order to allow the participants to prepare for the interview, the questions were e-mailed to them one week prior to the phone interviews (Appendix I, J K&L). These interviews were conducted with various individuals in local, state, and federal government positions.

The purpose of the interviews was to identify and review practices and opinions of those in private business as well as government with respect to vulnerable populations. The best practices discovered during the interviews could possibly be used later, if needed, as part of the methodology in developing assistance to vulnerable population program that had value for Pompano Beach Fire Rescue.

There were certain assumptions and limitations made by the author of this research paper. The assumption was made that all participants in the surveys and interviews were honest in their answers and understood the questions as presented. The author did not attach any qualifiers to any of the questions thereby influencing the answers. It was assumed that respondents to the NSEFO were firefighters.

Limitations included the lack of response to the national survey conducted through the NSEFO and via the internet. This survey did not meet the 95% confidence level ideally desired for surveys and would question the significance of any information gathered from the survey.

The exclusive use of the internet and the Survey Monkey web site may have limited response from potential participants either unable or unwilling to access the internet.

## Results

The first research question sought to determine if there was a common definition for “the vulnerable population” in the fire rescue service, as well as in all levels of government, local, state, and federal. Various surveys and interviews were conducted to determine if there was a consensus as to what exactly the vulnerable populations means to organizations and individuals.

The first survey (Appendix A) was sent out to all the Emergency Managers in Broward County. Questions 3, 4, and 5 of the survey sought to determine each of the local Emergency Manager’s definition of the vulnerable population. The results, which are compiled in Appendix B, revealed a variety of answers to the question indicating that at least at a local level there did not appear to be a consensus on exactly what the definition of vulnerable population was. Interestingly, in question 4 there was 100% agreement among the respondents that the elderly are a component of what should be considered in the definition of vulnerable population. In addition, in a phone interview with Chip Wilson who was the State of Florida Disability Coordinator, he also echoed the belief that the elderly should be included as part of the vulnerable population (personal communication, September 2010). The entire interview is contained in Appendix I of this paper. Finally, in question 5, which only 3 out of the 9 respondents answered, there was agreement among the 3 respondents that individuals who had some type of medical condition or disability should be included in the definition of vulnerable population.

The same idea of determining what the definition of the vulnerable population was also tested by submitting the same questions mentioned above to Emergency Managers across the State of Florida (Appendix C). The results of this survey are contained in Appendix D of this research paper. The 13 Florida Emergency Manager's who responded to the survey all answered question 3 of the survey (Appendix D) differently, again indicating that there is a lack of consensus on what the vulnerable population is at the state level also. Also at the state level 100% of the respondents believed that the elderly population should be included the definition of the vulnerable population. Of special note is that at the state level nearly 77% of the respondents believed that children should be included in the definition, as well as 84.6 believed that homeless should be included. This is compared to 33% and 22% respectively in the local survey. In the state survey results (Appendix D) the majority of the respondents (7 of the 12) would consider special medical needs patients as part of the vulnerable population if it was not included in the definition.

A national survey of Emergency Managers (Appendix E) across the United States elicited 13 responses (Appendix F). The responses to questions 3, 4, and 5 were also designed to determine the state's working definition of the vulnerable population. Each response is contained in Appendix F of this research paper. The response to question 3 revealed a wide array of answers as to what the definition of the vulnerable population is among state emergency managers. Once again each respond did include in question 4 that the elderly should be a component of whatever definition of the vulnerable population is. One hundred per cent of the respondents to question 4 agreed that elderly should be included in the definition of vulnerable population. The majority of the respondent to question 5 listed persons with any disability as a

category of the vulnerable population that was not a choice in the previous question that they believe should be included in the definition of vulnerable population.

A national survey of fire departments was conducted to also compare and contrast the definitions used by the departments with those from the previously mentioned surveys (Appendix G& H). The complete results of the survey are contained in Appendix H of this research paper. Amazingly of all the respondents, 69.1% of the departments did not have had a working definition of the vulnerable population. In addition only 65.4% of the respondents believed that the elderly should be included in the definition of vulnerable population, 60.8% identified medically disabled as a category that should be included, and the homeless was the third most common answer at 24.2%.

The second research question sought, through a series of local, state, and national surveys, to determine if the needs of the vulnerable population were being met. The results of the various surveys and the survey are contained in the appendix portion of this paper.

Questions 6, 8, 12, and 16 of Broward County EM Vulnerable Population Survey addressed (Appendix A and B) research question 2 on a local level. Question 6, which was an open ended question sought to determine from the local EM what were the three most important needs of the vulnerable population. The unanimous response from all the managers was food/water, shelter, and medications. Nearly 67% of the respondents had conducted some types of needs assessment of their vulnerable population as indicated in the results to question 8 (Appendix B). Question 12 asked as an example of a need that could be filled did the organization offer any alternative formats for providing information to vulnerable people. Only 44.4% of the respondents filled this need. Question 16 requested that the respondent self

evaluate their organization as to what they thought their ability to provide for the needs of the vulnerable population in their community was. The respondents had three choices of above average, average, and below average. The results indicated that 44.4% believed that they provided above average response to the needs of the vulnerable population, 55.6% were average, and none of the respondents believed that they provide below average response to the needs of the vulnerable population.

The same questions were presented to the EM across the state of Florida in a survey, Florida County EM Vulnerable Population Survey (Appendix C and D). The majority of the response to question 6 regarding needs emphasized the importance of food, shelter and basic needs (Appendix D) even though only 46.2% indicated that they had performed any type of survey to determine if the needs were being met. Throughout the state of Florida at a county level, the EM indicated that 76.9% provide some form of alternative needs as indicated in question 12 of the survey. Of the managers that did respond 46.2 % rated their organizations as above average in providing for the needs of the vulnerable population, 46.2% were average, and 7.7% were rated at below average in providing for the vulnerable population.

Questions 6, 8, 12, and 16 of the National EM Vulnerable Population Survey (Appendix E and F) addressed research question 2. This survey was directed to the state EM of each state in the United States. The complete results to these questions and the entire survey are contained in the appendix portion of this paper. In addition to food, shelter and the basic needs as was noted in the responses at a local and state level in Florida, the national survey included the addition of communication as a majority answer to this question. Across the nation, the response to how many respondents had conducted any type of needs survey of the vulnerable population

was only 36.4% had done so, with 63.6% indicating that they had not conducted any needs survey. The respondents did indicate that 54.5% do provide some form of alternative formats for providing information to the vulnerable population. Finally on a national level, the EM rated themselves at 18.2% above average, 81.8% average and none below average regarding their ability to provide for the needs of the vulnerable population.

The National Fire Department Vulnerable Population Survey (Appendix G and H) contained two questions, questions 7 and 8, which addressed the second research question. Unfortunately only 6.8% of the respondents believed that they had the ability to provide above average response to the needs of the vulnerable population with 50.0% rating themselves as average. A considerable number of the respondents, 43.2% rated themselves as below average with regards to providing for the needs of the vulnerable population. In addition only 21.5% of the departments responding have ever conducted any type of needs assessment of the vulnerable population in their community.

The third research question sought to determine what types of resources were available at the local, state, and federal level by surveying various organizations. The survey polled departments at a county level, state level, and various states throughout the United States as to the types of resources they can offer or utilize regarding providing for the vulnerable populations in their area.

Question 7 of the Broward County EM Vulnerable Population Survey (Appendix A and B) addressed research question 3 directly on a local basis. The survey and responses are contained in the appendix portion of this research paper. The question was an open ended

question with various responses which are located in the appendix B. The majority of the respondents indicated that they provide emergency services and basic needs.

The survey titled, Florida County EM Vulnerable Population Survey (Appendix C and D) addressed research question 3 by surveying county EM across the state of Florida. Question 7 of the survey elicited the response from the managers as to what resources their organization could provide to the vulnerable population during a disaster. The primary response was the basic needs of food, water, and shelter.

On a national level various other states were surveyed as to what types of resources they provide to local jurisdictions during a disaster. The results of this survey are contained in the appendix portion of this research paper (Appendix E&F). Question 7 of the National EM Vulnerable Population Survey examined the responses of the respondents. Most state EM indicated that they provide basic services and co-ordination of assistance through various mechanisms.

Research question 4 examined the various ways that organizations provide for the vulnerable population. The responses were elicited through various surveys sent to both local and state agencies. The questions sought a variety of information from best practices to policies and procedures.

The complete results to the Broward County EM Vulnerable Population Survey are contained in the appendix portion of this paper (Appendix A&B). Specific to research question 4 are questions 9, 10, 13, 14, 15, 17, 18, and 19.



In Broward County 66.7% of the respondents indicated that they have some type of mechanism in place to track the location of the vulnerable population. Additionally, 88.9% utilize a special needs registry for the vulnerable population in their jurisdictions in Broward County. The results indicated that from a training standpoint only 44.4% of the respondents involve representative from the vulnerable population groups in training sessions and even less, only 33.3%, are involved in the planning sessions dealing with how to plan for vulnerable populations. An interesting result is that 100% of the responses indicated that they do have a plan for dealing with the vulnerable population. Finally with regards to nursing homes and the vulnerable population 77.8% of the responding agencies track and know the locations of the nursing homes in their area as well as the location of any special needs patients. Two thirds of the agencies helped and were involved with the development of evacuation plans for nursing homes.

The complete results to the Florida County EM Vulnerable Population Survey are contained in the appendix portion of this paper (Appendix C&D). Specific to research question 4 are survey questions and results for questions 9, 10, 13, 14, 15, 17, 18, and 19.

One hundred per cent of the respondents to the Florida EM survey indicated that they utilize the special needs registry for their vulnerable population. In addition, 69.2% use some form of software to track the location of the vulnerable population in their jurisdiction. The respondents also indicated that 100% of them track and know the location of the special needs patients in their area. The results as to whether or not the Florida EM included representatives from the vulnerable population to participate in joint training exercise indicated 69.2% did allow them to participate. The same amount, 69.2% include representatives in their planning sessions

for dealing with the vulnerable populations. With regards to nursing homes the Florida EM survey indicated that 100% of the respondents were involved with the development of evacuation plans for nursing homes, and that 100% of the respondents knew the number and location of the nursing homes in their area. All respondent's disaster plans included considerations for dealing with the vulnerable population.

The complete results to the National EM Vulnerable Population Survey are contained in the appendix portion of this paper (Appendix E&F). Specific to research question d are questions 9, 10, 13, 14, 15, 17, 18, and 19. As a comparison the results of the survey are compared to the other surveys completed.

The results of the EM managers surveyed across the United States indicated that 18.2% of the respondents utilize any type of software to track the location of the vulnerable population in their areas and that only 27.3% have any type of special needs registry. A mere 18.2% know the number and location of any special needs patients in their jurisdiction. From a planning and training standpoint, the EM managers across the country that responded that 90.9% involve representatives from the vulnerable population in their planning sessions and 100% involve them in their training sessions. Only 45.5% of the EM survey indicated that they work with nursing homes in developing evacuation plans, which was the same percentage that indicated that know the number and locations of the nursing homes in their areas. Once again, the results indicated that 100% of the respondent's disaster plan included considerations for the vulnerable population.

The final survey results were from the National Fire Department Vulnerable Population Survey. A copy of the survey and the entire results are located in the appendix portion of this research paper (Appendix G&H). Questions 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, and 16 pertain directly

to research question 4. Question 16 is an open ended question with over 100 responses which are all listed in Appendix H.

The respondents to the fire department survey indicated that only 17.1% of them utilize any type of software to track the locations of vulnerable population in their area, this would include the use of GIS since only 18.6% of the respondents indicated that they utilized this technology as a tracking mechanism. The results of the survey indicated that 33.7% of the respondents did know the number and location of the medically disabled in their area as well as 95.7% knowing the number and locations of the nursing homes in their area. The results indicated that there were only 36.8% of the organizations that provided any specialized training to their personnel for dealing with the vulnerable populations and that only 31.9% of the respondents conducted any training scenarios involving special needs populations. From a planning standpoint, only 35.2% of the departments that responded included representatives from special needs groups in their disaster planning sessions. The results also indicated that only 54.4% of the respondents believed that their department was aware of the resources available to them for dealing with the vulnerable population. With regards to department's disaster plans including plans for dealing with the vulnerable population, 52.5% indicated that their plans did include such provisions. Finally, question 16 included the results of the 164 respondents' best practices for dealing with the vulnerable population (Appendix H).

The final results sought to determine if there was any evidence that the needs of the vulnerable populations were being met. The evidence was obtained through surveys and interviews which the entire surveys and interview questions are contained in the appendix

portion of this research paper. Research question 5 attempted to determine if there was any evidence that the needs of the vulnerable population were being met or not during a disaster.

The results of question 8, from both the Broward County Vulnerable Population Survey and the Florida County EM Vulnerable Population Survey (Appendix A, B, C, & D), indicated that 66.7% of the respondents in Broward County and only 46.2% of the respondents from around the state of Florida had ever surveyed the vulnerable population in their jurisdiction to determine if their needs were being met. The results are even lower, 36.4%, in the survey conducted of EM around the country (Appendix E&F). Finally, when the question was asked of fire departments around the country (Appendix G&H) if they knew what the needs of the vulnerable population were in their community, the results indicated that only a staggering 21.5% of the departments had ever conducted a survey to evaluate the special needs of the vulnerable population in their community.

The complete results of the four interviews (personal communications) that were conducted with individuals at federal, state, and local level can be found in the Appendix of this paper. The interview with Karen Dickerhoof of the Broward County Center for Independent Living is contained in Appendix I. Appendix J contains the complete interview with Chip Wilson who is the State of Florida Disability Coordinator and Appendix K contains the interview with Martin Gould from the National Council on Disability, a Federal organization, and Appendix L, which was the interview with Ginny Hazen, the Broward County Emergency Coordinator.

Dickerhoof's definition of vulnerable population closely resembled the federal approach in that it was functional based (Appendix I). Mr. Wilson from the State of Florida had a very

general definition of what the vulnerable population was comprised of (Appendix J) and Mr. Gould's definition was in line with the Federal definition and the National Response Framework definition of vulnerable population (Appendix K). Hazen noted Broward County was not very specific but very inclusive in what they considered vulnerable (Appendix L).

Both Dickerhoof and Wilson agreed that the top needs of the vulnerable population during a disaster were shelter, communications, and transportation. Mr. Gould believed that the needs were specific to the type of disaster that the population was exposed to. Hazen believed that a general lack of resources was the top need for the vulnerable population.

With regards to whether or not the needs of the vulnerable population were being met, all four individuals interviewed had varying opinions on the matter. Dickerhoof chose to rate how the needs were being met on a scale from A to D and incomplete. Mr. Wilson categorized the needs as "maybe" being met and Gould stated that he believed that the literature indicated that the needs were not being met (Appendix J and K). Hazen noted that 30-40 percent of the needs were being met.

## Discussion

The purpose of this research was to identify the needs of the city's vulnerable population during a disaster and improve the current disaster plan to include providing for those needs. Early in the research it became apparent that both private and public organizations had differing definitions on exactly what the vulnerable population was and who was included in the vulnerable population.

The federal government takes a functional approach in its definition of the vulnerable population which is contained in the National Response Framework document (Department of Homeland Security, 2008). Although this definition is primarily gauged by an individual's ability to maintain independence in functional areas such as communication, transportation, supervision and medical care, the individual may also have additional needs. The State of Florida had a much broader view of what was considered vulnerable population, to include not only those mentioned in the federal standard but also such segments of the population as the blind, deaf, non-English speaking, homeless, frail, elderly, and isolated (Florida Department of Health, 2009). Finally at a local level there was even less consensus on a definition of what the vulnerable population was. Broward County was very inclusive of all segments of the population (Appendix L) and Pompano Beach did not have a definition for vulnerable population, which only reiterated the importance of developing the needed procedures for vulnerable populations in the emergency operations plan.

The survey results as to a definition for vulnerable population confirmed what the literature review and research indicated when compared, which was that there was no clear consensus on a definition of vulnerable population from the individual firefighter at the local level right on up through the counties, states and federal levels of emergency management.

Kailes and Enders (2007) noted that often times the only thing that groups have in common is that they are left out of the process. It was interesting in the survey of various state Emergency Managers (EM) from around the country, that although there were slight similarities in the definition of what the vulnerable population was, there were noted differences! The elderly is also one segment of the vulnerable population that as individuals, everyone included in their definition of the vulnerable population.

The fact that most areas tend to tailor their definition of what is considered vulnerable population to their jurisdiction is not necessarily a bad practice and was reiterated by FEMA in their Comprehensive Preparedness Guide 301 (Department of Homeland, 2008). Who else other than the local jurisdiction would know better the makeup of their population and what would comprise the vulnerable population? An area that is heavy in nursing homes and elderly would present a much higher demand for services on a system than an area that has a small population of non-English speaking individuals. Although both will require a response and should be included in the planning process, just how vulnerable the group is and the impact on the system could vary from organization to organization.

Ultimately the biggest benefit of a standardized definition is realized in that everyone understands exactly what the other person is speaking about when they talk about the vulnerable population. All disasters initially begin as a local event and only after the local resources become overwhelmed does it become a state or federal event (Bascetta, 2006). One must remember that when a local disaster escalates to a county, state, or federal level, the individuals working to provide services need to be in agreement on terms and definitions. More than likely there will always be slight differences in the definition of the vulnerable population among systems at all levels; however the benefits of a consensus as to what the definition and makeup of the vulnerable population is will help to enhance the response and effective service provided to the individuals.

Identifying the specific needs of the vulnerable population proved to be much more difficult than actually defining what the vulnerable population is. Although one of the first challenges was the fact that without an industry accepted, defined definition of what the vulnerable population was, it was difficult to know what one was looking for as a group. If one

was to use any of the definitions mentioned above, then the issue of identifying the vulnerable individuals becomes somewhat easier.

Due to the fact that most every definition of the vulnerable population included some form of the elderly population in the definition, identifying the needs of the elderly and applying what is common to the other segments of the population could be helpful. It is interesting to note that 100% of all the respondents to the surveys believed that the elderly should be included in the vulnerable populations, solidifying the idea that one area of agreement is the belief that the elderly are vulnerable during a disaster and should be considered as such. Also as stated earlier, including the elderly as any component of the vulnerable population was well supported by the research surveys.

As noted by Aldrich and Benson (2008) it is useful to involve the advocates of vulnerable population groups in planning for the needs of the group before, during, and after a disaster. These groups are normally in tune with the special needs of each group and can provide expertise in providing the needs of the group. It is also important to understand that often times the needs of the vulnerable population are not completely met or addressed by traditional planning (Wingate et al, 2007). An example of this would be that in Hurricane Katrina 75% of the reported deaths were among the elderly population (Wingate et al, 2007). In addition there were over 280 nursing homes that remained full as the storm approached (Wingate et al, 2007). The obvious question is how many lives could have been saved if only the planners had understood the need to evacuate and transport the elderly from the nursing homes prior to the storm? One cannot help but think that had the needs of the individuals and nursing homes been considered during planning sessions, by involving advocates from that segment of the vulnerable population,



their needs may not have been overlooked as the storm hit, thereby saving countless lives by knowing the needs of the individuals before the disaster.

The best way to identify the needs of the vulnerable population is through their eyes, according to the National Organization of Disability (Davis, 2009). These needs are typically identified through close working relationships and partnerships with various individuals and groups. The involvement of these groups and individuals in the department's training and practice drills is a good practice and one that should occur long before any disaster strikes.

Understanding that involving actual individuals of the vulnerable population to identify their needs is one of the best ways to plan for the needs of the vulnerable population during a disaster, it was surprising to this researcher that according to the various surveys more organizations did not survey the vulnerable population to determine if their needs were being met. Also surprising was the fact that many organizations did not involve representatives of the vulnerable population in the planning and training exercises to help ensure that their needs were being met before, during and after a disaster.

The research indicated that initially, in most disaster's the responsibility for mitigation and dealing with the disaster falls on the local authorities (Bascetta, 2006). Once the capabilities of the local government are exceeded then the resources available at the state and even federal level become available.

As mentioned earlier, the time to be aware of these resources and procedures is not in the middle of the disaster. Often times there are many resources that are available that if an organization is not aware of beforehand, they may not utilize. An example of this would be the utilization of the National Disaster Medical Teams that were used during Hurricane Katrina.

Normally not used to evacuate nursing homes, they were eventually used to perform just that task in New Orleans during Katrina with the assistance of local and state authorities (Bascetta, 2006). The use of the medical teams is a classic example of how a resource can be used other than how it is designed to be used as long as the planners are aware that the resource exists. Local jurisdictions would do well to be aware of all the resources available to them at both a state and federal level before a disaster occurs.

The data from the surveys indicated that the majority of the respondents have a fairly good understanding on the resources available, both locally and at the federal level. As anyone who has had to deal with an incident can attest to, half the challenge of successful mitigation is know where and how to get the resources. This would obviously be the case with the vulnerable population before, during, and after a disaster.

The literature review, as well as the multiple surveys revealed a variety of ways others have provided for the needs of the vulnerable population before, during, and after a disaster. Early on the importance of communicating with the vulnerable population was identified (Aldrich & Benson, 2008). It is often important to remember that this communication can take many different forms, from public education announcements in multiple languages to information provided for the hearing impaired. One must remember that communications should be all inclusive for all segments of the vulnerable population. It was interesting to note that in Broward County the survey of local EM indicated that approximately 55% of the respondents provided notification and information in an alternative format such as brail, which was the same percentage in the national survey of other fire department. Although it would appear that the importance of communications is understood, there is obviously room for improvement by the fact that only slightly over half of the responding agencies offer alternative formats. The

question that remains to be asked is how many people in the vulnerable population are not getting the information? We must remember that often times the needs of the vulnerable population are not met by traditional methods and planning (Wingate et al., 2007), which requires planners to think out of the box in finding solution to the challenges presented.

Finally, the one apparent need that could have the greatest impact is the need to have better evacuation plans for the vulnerable populations. Bascetta (2006) identified evacuations and transportation disadvantages as one the primary lacking needs of the vulnerable population. This was clearly evident in the Katrina disaster when we look at the number of elderly who lost their lives due to a lack of a proper evacuation plan and transportation out of the area. Without proper planning the same tragedy could occur in Pompano without evacuation and transportation considerations for the vulnerable population.

Most respondent to the surveys indicated that they knew where the nursing homes in their jurisdiction were and did work with the nursing homes to ensure that they had evacuation plans in place (Appendix B, D, F, & G). One must remember that Silbia et al. (2004) noted that often nursing homes are not included in the pre planning stages of emergency preparedness and that in New Orleans even the nursing homes that had evacuation plans and implemented the plans had problems with evacuating. Of equal importance is that organizations practice the evacuation plan before the disaster strikes to make sure that such things as the transportation component of the plan is feasible. Often times the plan can look good on paper, however if it is never tested until a disaster strikes is a sure recipe for problems.

Finally, the research sought to determine if the needs of the vulnerable population were being met. Initially one would have to question whether or not the needs were being met in light

of the fact that during Hurricane Katrina 75% of the reported deaths were in the elderly population (Wingate et al., 2007). In addition, it was noted that nursing homes that did have evacuation plans often had problems implementing those evacuation plans (Saliba et al., 2004). This did not include the nursing homes that did not even have evacuation plans or plans that were inadequate (Sullivan & Hakkienn, 2004). Finally, it is important to note that each of the individuals interviewed on a federal, state and local level were hesitant to state that the needs of the vulnerable population were being met, which would lead one to conclude that there is still work to be done.

Both on a local and national level the results of the survey indicated that nearly 64% of the respondents did not conduct any type of survey or measuring of their local vulnerable population satisfaction as to whether or not their needs were being met. Finally, as noted in the study done by Page (2005) of 30 randomly selected counties where disasters had occurred the governments were not meeting the needs of the vulnerable population. Pompano Beach, like many other organizations does not conduct any type of analysis of the satisfaction level of the vulnerable population with the service provided to them regarding their needs during a disaster.

Shelter and basic needs (food, water, and shelter) were cited in the surveys as the primary needs provided by emergency organizations and also is one of the primary needs of the vulnerable population before, during and after a disaster. Although shelter from the standpoint of a roof over head is provided prior to a disaster for the vulnerable population in New Orleans the lack of preparation for evacuations impacted the efforts during and after the disaster.

## Recommendations

Pompano Beach has committed to becoming one of the safest cities of its size for all residents and visitors. The problem is that if this goal is to be realized, Pompano Beach Fire Rescue must address the issue of developing a plan for providing for and dealing with the vulnerable population before, during, and after a disaster. The following recommendations are intended to assist in the process of developing policies and procedures that allow Pompano Beach Fire Rescue to provide service to the vulnerable population before, during and after a disaster thereby making the city safer for all residents and visitors.

- Develop a committee to address the special needs of the vulnerable population in the community before, during, and after a disaster.
- Establish a common working definition of what is considered the vulnerable population in the community.
- Design a customer survey to be administered to the community to determine what the needs of the vulnerable population are and if the needs are being met.
- Investigate the use of various software programs to better identify and track the locations of various vulnerable populations in the area.
- Utilize GIS mapping to map and identify current location of vulnerable population locations such as nursing homes, homeless shelters, and medically disabled in order to better allocate resources during a disaster.
- Work with various organizations throughout the community that deal with the vulnerable population to establish relationships.
- Developing training programs for the vulnerable population on how to prepare for disasters.

- Involve people from the vulnerable population community in developing and participating in training exercises.
- Involve members of the vulnerable population community in the development of procedures to be used before, during, and after a disaster.
- Ensure that provisions are included in the evacuation plan for vulnerable population individuals as well as those who are transportation challenged.
- Establish special needs shelter for medially disabled.
- Establish a special needs registry
- Solidify and finalize contracts and agreements with support organizations for services to be used before the disaster strikes.
- Develop various ways to communicate messages to the population in order to address persons who may be deaf, cannot read, or speak English.
- Ensure that a mechanism is developed and in place to measure the success of the policies and procedures, as well as to change them if necessary.

Further research would be required into the costs of implementing the above recommendations. In addition, readers should perform individual assessments of their situation as some of the information provided may be specific only to Pompano Beach Fire Rescue. An individual assessment of one's community, strategies, and action plan specific to one's community and needs is highly recommended.

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## APPENDIX A

## BROWARD COUNTY EM VULNERABLE POPULATION SURVEY

## 1. What is your position in your organization?

## 2. Please include your demographic information


Name:	<input type="text"/>
Company:	<input type="text"/>
Address:	<input type="text"/>
Address 2:	<input type="text"/>
City/Town:	<input type="text"/>
State:	<input type="text" value="-- select state --"/>
ZIP:	<input type="text"/>
Country:	<input type="text"/>
Email Address:	<input type="text"/>
Phone Number:	<input type="text"/>

## 3. What is your organization's definition of vulnerable population?

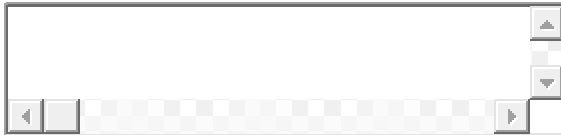
## 4. Which of the following groups does your organization consider to be part of the vulnerable population?

- |                                   |   |   |
|-----------------------------------|---|---|
| <input type="checkbox"/> Elderly  | <input type="checkbox"/> Homeless               | <input type="checkbox"/> Illegal immigrants         |
| <input type="checkbox"/> Children | <input type="checkbox"/> Single Parent Children | <input type="checkbox"/> Economically Disadvantaged |

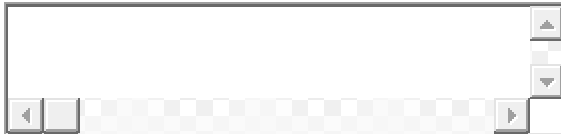
**5. List any other categories that your organization considers part of the vulnerable population that were not listed in the previous question.**



**6. What would you consider the 3 most important needs of the vulnerable population?**



**7. What if any are some of the resources that your organization can provide to local jurisdictions during a disaster?**



**8. Has your organization ever conducted any type of survey to determine if the needs of the vulnerable population are being met?**

☐ Yes

☐ No

**9. Does your organization utilize any type of software to track the location of vulnerable populations?**

☐ Yes

☐ No

**10. Does your organization utilize a special needs registry for the vulnerable population?**

- ☐ Yes
- ☐ No

**11. How would you rate your organization's ability to deal with the vulnerable population during an emergency?**

- ☐ Above Average
- ☐ Average
- ☐ Below Average

**12. Does your organization provide information regarding emergency preparation for the vulnerable populations in alternative formats such as brail, various languages etc.?**

- ☐ Yes
- ☐ No

**13. Has your organization included representatives from vulnerable population groups in disaster planning sessions?**

- ☐ Yes
- ☐ No

**14. Has your organization included representatives from vulnerable population groups in training sessions?**

- ☐ Yes
- ☐ No

**15. Does your organization work with nursing homes and/or skilled nursing facilities to develop evacuation plans?**

- ☐ Yes
- ☐ No

**16. How would you rate your organization's ability to provide for the needs of the vulnerable population in a post disaster situation?**

- ☐ Above Average
- ☐ Average
- ☐ Below Average

**17. Does your organization track and know the number and location of nursing homes in your jurisdiction?**

- ☐ Yes
- ☐ No

**18. Does your organization track and know the number and location of special needs patients in your jurisdiction?**

- ☐ Yes
- ☐ No

**19. Does your department's current disaster plan include considerations for dealing with the vulnerable population?**

- ☐ Yes
- ☐ No

## APPENDIX B

### BROWARD COUNTY EM VULNERABLE POPULATION SURVEY WITH ANSWERS

#### 1. What is your position in your organization?

1. Chief of Fire Rescue

---

2. Division Chief/Fire Marshal

---

3. Detective

---

4. Fire Chief

---

5. Assistant Chief

---

6. Emergency Management Coordinator

---

7. Recreation Supervisor

---

8. Assistant Town Manager

---

9. Deputy Fire Chief and EM Director

**Response  
Count**

9

*answered question 9*

*skipped question 0*

#### 2. Please include your demographic information

**Response**

**Percent**

**Response**

**Count**

**Name: 100.0% 9**

1. Donald P. Widing

---

2. Jeff Moral

---

3. John M. Landry

---

4. Steve Pollio

---



5. Julie Downey

---

6. Juan Farach

---

7. Kathy Osborn

---

8. Tom Wilde

---

9. Michael Cassano

**Company: 100.0% 9**

1. Oakland Park Fire Rescue

---

2. Tamarac Fire Rescue

---

3. Hillsboro Beach Police Department

---

4. Coconut Creek Fire Rescue

---

5. Davie Fire Rescue

---

6. City of Sunrise

---

7. Cooper City

---

8. Town of Pembroke Park

---

9. Dania Beach Fire Rescue

**Address: 100.0% 9**

1. 2100 N.W. 39 St

---

2. 6000 Hiatus Road

---

3. 1210 Hillsboro Mile

---

4. 4800 West Copans Rd

---

5. 6901 Orange Dr

---

6. 777 Sawgrass Corporate Parkway

---

7. 9000 SW 50th Place

---

8. 3150 SW 52 Ave

---

9. 100 W. Dania Beach Blvd.

Address 2: 11.1% 1  
**City/Town: 100.0% 9**

1. Oakland Park
2. Tamarac
3. Hillsboro Beach
4. Coconut Creek
5. Davie
6. Sunrise
7. Cooper City
8. Pembroke Park
9. Dania Beach

**State: 100.0% 9**

1. FL
2. FL
3. FL
4. FL
5. FL
6. FL
7. FL
8. FL
9. FL

**ZIP: 100.0% 9**

1. 33309
2. 33321
3. 33062
4. 33063

5. 33314

---

6. 33325

---

7. 33328

---

8. 33023

---

9. 33004

---

**Country: 100.0% 9**

**Email Address: 100.0% 9**

1. donaldw@oaklandparkfl.org

---

2. jeffmo@tamarac.org

---

3. jlandry@townofhillsborobeach.com

---

4. spollio@coconutcreek.net

---

5. jdowney@davie-fl.gov

---

6. jfarach@cityfosunrise.org

---

7. kosborn@coopercityfl.org

---

8. twilde@twonofpembrokepark.com

---

9. mcassano@ci.dania-beach.fl.us

---

**Phone Number: 100.0% 9**

1.	954-630-4547	954-630-4547
----	--------------	--------------

---

2.	954-597-3800	954-597-3800
----	--------------	--------------

---

3.	954-427-6600	954-427-6600
----	--------------	--------------

---

4.	954 973-6706	954 973-6706
----	--------------	--------------

---

5.	954 797-1189	954 797-1189
----	--------------	--------------

---

6.	954-802-9903	954-802-9903
----	--------------	--------------

---

7.	954-434-4300	954-434-4300	x255
----	--------------	--------------	------

---

8.	9549664600
----	------------

---

9. 954-651-5023 954-651-5023

**answered question 9**  
**skipped question 0**  
 2 of 7

### 3. What is your organization's definition of vulnerable population?

1. Persons who require services beyond the capabilities of existing resources and/or are otherwise unable to properly provide their safety and health.

2. The same as Broward County. The Vulnerable Population registry allows people who are disabled, frail or have health issues to register in advance with their city so that emergency workers may plan a better response to vulnerable residents in a recovery effort following a hurricane or other emergency. Residents that were disabled, frail or had health issues and do not have family or friends to assist them during the prolonged power outages in the aftermath. Residents who are not able to leave their apartments to get assistance because the elevators do not function or let anyone know that they were in need because the phones were not working properly.

3. Elderly

4. Populations that need assistance for day to day life.

5. based on the Broward County assessment for addition to the vulnerable population list

6. If you are at risk due to a disability, frailty or health issue, regardless of age, AND elect to stay at home in the event of a hurricane or other disaster.

7. A person living alone with no other means of support by means of a relative, neighbor, or friend.

8. All mobile home park residents

9. Any person who feels that they are going to require extraordinary help in either the pre or post disaster event.

#### Response

#### Count

9

**answered question 9**  
**skipped question 0**

### 4. Which of the following groups does your organization consider to be part of the vulnerable population?

Elderly 100.0% 9

Children 33.3% 3

Homeless 22.2% 2

Single Parent Children 11.1% 1

Illegal immigrants 0.0% 0

Economically Disadvantaged 22.2% 2

**answered question 9**

*skipped question 0*

**5. List any other categories that your organization considers part of the vulnerable population that were not listed in the previous question.**

1. Persons with complicated medical conditions or are not mobile.
2. All disabled, any age
3. NA
4. handicap, disabled
5. Medically challenged, physically challenged

**Response**

**Count**

5

*answered question 5*

*skipped question 4*

3 of 7

**6. What would you consider the 3 most important needs of the vulnerable population?**

1. Medical assistance  
Sheltering  
Transportation and Food
2. Medical, food & water and transportation.
3. Medical  
Housing  
Caregivers
4. medications, food, water
5. (food, shelter, medical care)  
primary care & on-going care  
assesablity/mobility issues  
transportations issues for care
6. Electricity  
Water/Food  
Information
7. emergency disaster assistance, food, shelter, aid.
8. shelter during hurricanes  
food

water

9. Shelter, access to medical services, food/water

**Response**

**Count**

9

*answered question 9*

*skipped question 0*

## 7. What if any are some of the resources that your organization can provide to local jurisdictions during a disaster?

1. Fire Rescue emergency operations personnel and equipment

ESF 1 Transportation:

a. Purpose: Provide or obtain emergency transportation resources to support the needs of voluntary organizations and other emergency support functions requiring emergency transportation capacity to perform their emergency response, recovery and assistance missions.

ESF 8 Health and Medical Services:

2. a. Purpose: Identify, manage, and organize the response of resources needed for public health and medical care needs following a significant emergency, and to coordinate emergency response and relief assistance between local and state and federal governments for emergency health and medical support.

ESF 11 Food and Water:

a. Purpose: Identify, obtain, transport and distribute food, water, and ice needs of victims in the aftermath of a disaster or an emergency

3. Limited but the county has resources.

4. Needs assessment.

5. we provide primary assistance if an emergency exists and work with other agencies for ongoing care

6. Information  
Liaison functions with external Governments and NGOs

7. n/a

8. provide emergency services

9. personnel, transportation, readiness initiatives

**Response**

**Count**

9

*answered question 9*

*skipped question 0*

**8. Has your organization ever conducted any type of survey to determine if the needs of the vulnerable population are being met?**

Yes 66.7% 6

No 33.3% 3

*answered question 9*

*skipped question 0*

4 of 7

**9. Does your organization utilize any type of software to track the location of vulnerable populations?**

Yes 66.7% 6

No 33.3% 3

*answered question 9*

*skipped question 0*

**10. Does your organization utilize a special needs registry for the vulnerable population?**

Yes 88.9% 8

No 11.1% 1

*answered question 9*

*skipped question 0*

**11. How would you rate your organization's ability to deal with the vulnerable population during an emergency?**

Above Average 44.4% 4

Average 55.6% 5

Below Average 0.0% 0

*answered question 9*

*skipped question 0*

5 of 7

**12. Does your organization provide information regarding emergency preparation for the vulnerable populations in alternative formats such as brail, various languages etc.?**

Yes 55.6% 5

No 44.4% 4

*answered question 9*

*skipped question 0*

**13. Has your organization included representatives from vulnerable population groups in disaster planning sessions?**

Yes 33.3% 3

No 66.7% 6

*answered question 9*

*skipped question 0*

**14. Has your organization included representatives from vulnerable population groups in training sessions?**

Yes 44.4% 4

No 55.6% 5

*answered question 9*

*skipped question 0*

6 of 7

**15. Does your organization work with nursing homes and/or skilled nursing facilities to develop evacuation plans?**

Yes 66.7% 6

No 33.3% 3

*answered question 9*

*skipped question 0*

**16. How would you rate your organization's ability to provide for the needs of the vulnerable population in a post disaster situation?**

Above Average 44.4% 4

Average 55.6% 5

Below Average 0.0% 0

*answered question 9*

*skipped question 0*



**17. Does your organization track and know the number and location of nursing homes in your jurisdiction?**

Yes 77.8% 7

No 22.2% 2

*answered question 9*

*skipped question 0*

7 of 7

**18. Does your organization track and know the number and location of special needs patients in your jurisdiction?**

Yes 77.8% 7

No 22.2% 2

*answered question 9*

*skipped question 0*

**19. Does your department's current disaster plan include considerations for dealing with the vulnerable population?**

Yes 100.0% 9

No 0.0% 0

*answered question 9*

*skipped question 0*

## APPENDIX C

### FLORIDA COUNTY EM VULNERABLE POPULATION SURVEY

#### 1. What is your position in your organization?

#### 2. Please include your demographic information

Name:	<input type="text"/>
Company:	<input type="text"/>
Address:	<input type="text"/>
Address 2:	<input type="text"/>
City/Town:	<input type="text"/>
State:	<input type="text" value="-- select state --"/>
ZIP:	<input type="text"/>
Country:	<input type="text"/>
Email Address:	<input type="text"/>
Phone Number:	<input type="text"/>

#### 3. What is your organization's definition of vulnerable population?

**4. Which of the following groups does your organization consider to be part of the vulnerable population?**

- |                                   |   |   |
|-----------------------------------|---|---|
| <input type="checkbox"/> Elderly  | <input type="checkbox"/> Homeless               | <input type="checkbox"/> Illegal immigrants         |
| <input type="checkbox"/> Children | <input type="checkbox"/> Single Parent Children | <input type="checkbox"/> Economically Disadvantaged |

**5. List any other categories that your organization considers part of the vulnerable population that were not listed in the previous question.**

**6. What would you consider the 3 most important needs of the vulnerable population?**

**7. What if any are some of the resources that your organization can provide to local jurisdictions during a disaster?**

**8. Has your organization ever conducted any type of survey to determine if the needs of the vulnerable population are being met?**

- ☐ Yes
- ☐ No

**9. Does your organization utilize any type of software to track the location of vulnerable populations?**

- ☐ Yes
- ☐ No

**10. Does your organization utilize a special needs registry for the vulnerable population?**

- ☐ Yes
- ☐ No

**11. How would you rate your organization's ability to deal with the vulnerable population during an emergency?**

- ☐ Above Average
- ☐ Average
- ☐ Below Average

**12. Does your organization provide information regarding emergency preparation for the vulnerable populations in alternative formats such as brail, various languages etc.?**

- ☐ Yes
- ☐ No

**13. Has your organization included representatives from vulnerable population groups in disaster planning sessions?**

- ☐ Yes
- ☐ No

**14. Has your organization included representatives from vulnerable population groups in training sessions?**

- ☐ Yes
- ☐ No

**15. Does your organization work with nursing homes and/or skilled nursing facilities to develop evacuation plans?**

- ☐ Yes
- ☐ No

**16. How would you rate your organization's ability to provide for the needs of the vulnerable population in a post disaster situation?**

- ☐ Above Average
- ☐ Average
- ☐ Below Average

**17. Does your organization track and know the number and location of nursing homes in your jurisdiction?**

- ☐ Yes
- ☐ No

**18. Does your organization track and know the number and location of special needs patients in your jurisdiction?**

- ☐ Yes
- ☐ No

**19. Does your department's current disaster plan include considerations for dealing with the vulnerable population?**

- ☐ Yes
- ☐ No

## APPENDIX D

### FLORIDA COUNTY EM VULNERABLE POPULATION SURVEY RESULTS

#### 1. What is your position in your organization?

1. Bureau Manager
2. Director
3. Deputy Director
4. Plans Chief
5. Assistant County Manager (EFO)
6. Emergency Management Technician
7. Director of Emergency Management
8. Emergency Management Director
9. Emergency Management Director
10. Emergency Management Chief

#### 2. Please include your demographic information

**Name: 100.0% 13**

1. Nixsa Serrano
2. Pete McNally
3. Linda Stoughton
4. Daniel Hahn
5. Robert J Majka Jr
6. Patti Clemens
7. Thomas B. Kochheiser, Ph.D.
8. Richard

9. Rhonda Lewis

---

10. David Donnelly

**Company: 100.0% 13**

1. Miami-Dade Dept. of Emergency Mgmt.

2. Polk Co. Emergency Management

---

3. St. Johns County Emergency Management

---

4. Division of Emergency Management

---

5. Bay County Commission

---

6. Collier Co Emergency Management

---

7. Nassau County Emergency Mgt.

---

8. Shepard

---

9. Liberty County Emergency Mgt.

---

10. Alachua County Emergency Management

**Address: 100.0% 13**

1. 9300 NW 41st St

2. 1295 Brice Blvd.

---

3. 100 EOC Drive

---

4. 4499 Pine Forest Rd

---

5. 840 W. 11th Street

---

6. 8075 Lely Cultural Pkwy

---

7. 77150 Citizens Circle

---

8. 404 W. Orange St.

---

9. 10979 NW Spring Street

---

10. P.O. Box 548

Address 2: 15.4% 2

**City/Town: 100.0% 13**

1. 9300 NW 41st St

---

2. 1295 Brice Blvd.

---

3. 100 EOC Drive

---

4. 4499 Pine Forest Rd

---

5. 840 W. 11th Street

---

6. 8075 Lely Cultural Pkwy

---

7. 77150 Citizens Circle

---

8. 404 W. Orange St.

---

9. 10979 NW Spring Street

---

10. P.O. Box 548

---

**State: 100.0% 13**

1. 9300 NW 41st St

---

2. 1295 Brice Blvd.

---

3. 100 EOC Drive

---

4. 4499 Pine Forest Rd

---

5. 840 W. 11th Street

---

6. 8075 Lely Cultural Pkwy

---

7. 77150 Citizens Circle

---

8. 404 W. Orange St.

---

9. 10979 NW Spring Street

---

10. P.O. Box 548

---

**ZIP: 100.0% 13**

1. 33167

---

2. 33830

---



3. 32092

---

4. 32583

---

5. 32401

---

6. 34113

---

7. 32097

---

8. 33873

---

9. 32321

---

10. 32602

Country: 92.3% 12

**Email Address: 100.0% 13**

1. nixsa@miamidade.gov

---

2. petemcnally@polkfl.com

---

3. emgmgt@sjcfl.us

---

4. danielh@santarosa.fl.gov

---

5. bmajka@co.bay.fl.us

---

6. patticlemens@colliergov.net

---

7. tkochheiser@nassaucountyfl.com

---

8. rich.shepard@hardeecounty.net

---

9. lcm@gtcom.net

---

10. dad@alachuacounty.us

**Phone Number: 100.0% 13**

1. 305-468-5410      305-468-5410

---

2. (863)534-5605      (863)534-5605

---

3. 9048245550

---

4. 850-983-4606      850-983-4606

---

5.	850-819-8123	850-819-8123
6.	239 252 3624	239 252 3624
7.	904.548.4980	904.548.4980
8.	863-773-6373	863-773-6373
9.	850-643-2339	850-643-2339
10.	352.264.6500	352.264.6500

**answered question 13**

**skipped question 0**

2 of 7

### 3. What is your organization's definition of vulnerable population?

1. Individuals in the community who many not have the means or resources available to assist themselves during or after a disaster due to economic, social, or other factors. Also, Individuals located in high risk communities such as coastal areas.
2. A vulnerable population is that part of the general population that is at risk from a specific hazard. Some groups may be more vulnerable to certain types of incidents than others and each event needs to be considered and approached independently regarding vulnerabilities.
3. Citizens and visitors that will need specialized assistance during a disaster.
4. Those with a decreased capability to manage their own affairs or receive information in a time of crisis
5. Any portion of the population that is vulnerable to the consequences of a crisis whether man made or natural disaster.
6. Persons who due to a physical, emotional, sensory or visual impairment and are not able to respond independently to an emergency situation that would require an evacuation of their home.
7. Individuals who are those living in hazard areas, flood plain coastal areas, manufactured or mobile homes and people with special needs.
8. Definition will depend on the type of hazard.
9. The population that could be most adversely impacted and the recovery thereof.
10. Any population at risk due to a hazard.

**Response  
Count**

13

**answered question 13**

**skipped question 0**

#### 4. Which of the following groups does your organization consider to be part of the vulnerable population?

Elderly 100.0% 13  
 Children 76.9% 10  
 Homeless 84.6% 11  
 Single Parent Children 38.5% 5  
 Illegal immigrants 30.8% 4  
 Economically Disadvantaged 69.2% 9

*answered question 13*  
*skipped question 0*

#### 5. List any other categories that your organization considers part of the vulnerable population that were not listed in the previous question.

1. Handicapped individuals and electrical/oxygen dependent individuals
2. Special Needs, residents in flood-prone areas, mobile home residents in wind-storms,
3. Medically Electric Dependent
4. Disabled
5. Any person with special medical needs or who may be transportation disadvantaged.
6. see # 3
7. n/a
8. Special Medical Needs
9. Special Needs (Medical)  
Transportation Dependent
10. English as second language or non-English speaking  
geographically or culturally isolated (immigrants, regardless of status)  
physical and mentally disabled  
developmental issues and medical or chemical dependencies  
prisoners  
pregnant women  
There is a companion element with the Pet Friendly Sheltering - addressed in our Pet Friendly ICP

**Response**  
**Count**

12

*answered question 12*  
*skipped question 1*

3 of 7

## 6. What would you consider the 3 most important needs of the vulnerable population?

1. Food, clothing, shelter
2. Shelter, food, health care
3. Food, Water, Shelter with power.
4. assistance with evacuations  
assistance with preparedness  
assistance with understanding the threat
5. Food, shelter, recovery assistance.
6. Communication of available resources, coordination of services available to the vulnerable population, continual updating/monitoring of programs and resources available.
7. shelter, food, water
8. Risk Shelters  
Transition Services  
Recovery Assistance
9. Basic life essentials. Food, water and shelter
10. Food, shelter, transportation

### Response Count

13

*answered question 13**skipped question 0*

## 7. What if any are some of the resources that your organization can provide to local jurisdictions during a disaster?

1. Our organization coordinates with direct service providers, including CBOs, NGOs, and other local, state, and public entities, to provide resources to the most affected communities after a disaster.
2. Assistance with sheltering and access to resources from across the region and state
3. Food, Water, Shelter both Evacuation and Temporary Housing, Tarps.
4. Special needs shelter  
Assistance with transportation  
distribution of disaster kits
5. We are responsible for the full range of emergency services with the exception of law enforcement.

6. Identifying those residents within a jurisdiction by address, fire district or need. Resources available for the hearing impaired (TDD phones), Sign Language Interpreter for presentations and EOC activations.

---

7. We are emergency management and provide all ESF functions as a result of natural or manmade emergencies or disaster situations.

---

8. Risk sheltering

---

9. Through mutual aid and Red Cross, Faith based organizations, etc. we can provide basic resources but probably not a long length of time.

---

10. Coordination, Shelters, Transportation, Food and Water,

**Response****Count**

13

*answered question 13**skipped question 0*

### **8. Has your organization ever conducted any type of survey to determine if the needs of the vulnerable population are being met?**

Yes 46.2% 6

No 53.8% 7

*answered question 13**skipped question 0*

4 of 7

### **9. Does your organization utilize any type of software to track the location of vulnerable populations?**

Yes 69.2% 9

No 30.8% 4

*answered question 13**skipped question 0*

### **10. Does your organization utilize a special needs registry for the vulnerable population?**

Yes 100.0% 13

No 0.0% 0

*answered question 13**skipped question 0*

**11. How would you rate your organization's ability to deal with the vulnerable population during an emergency?**

Above Average 46.2% 6

Average 53.8% 7

Below Average 0.0% 0

*answered question 13*

*skipped question 0*

5 of 7

**12. Does your organization provide information regarding emergency preparation for the vulnerable populations in alternative formats such as brail, various languages etc.?**

Yes 76.9% 10

No 23.1% 3

*answered question 13*

*skipped question 0*

**13. Has your organization included representatives from vulnerable population groups in disaster planning sessions?**

Yes 69.2% 9

No 30.8% 4

*answered question 13*

*skipped question 0*

**14. Has your organization included representatives from vulnerable population groups in training sessions?**

Yes 69.2% 9

No 30.8% 4

*answered question 13*

*skipped question 0*

6 of 7

**15. Does your organization work with nursing homes and/or skilled nursing facilities to develop evacuation plans?**

Yes 100.0% 13

No 0.0% 0

*answered question 13*

*skipped question 0*

**16. How would you rate your organization's ability to provide for the needs of the vulnerable population in a post disaster situation?**

Above Average 46.2% 6

Average 46.2% 6

Below Average 7.7% 1

*answered question 13*

*skipped question 0*

**17. Does your organization track and know the number and location of nursing homes in your jurisdiction?**

Yes 100.0% 13

No 0.0% 0

*answered question 13*

*skipped question 0*

7 of 7

**18. Does your organization track and know the number and location of special needs patients in your jurisdiction?**

Yes 100.0% 13

No 0.0% 0

*answered question 13*

*skipped question 0*

**19. Does your department's current disaster plan include considerations for dealing with the vulnerable population?**

Yes 100.0% 13

No 0.0% 0

*answered question 13*

*skipped question 0*

## APPENDIX E

## NATIONAL EM VULNERABLE POPULATION SURVEY

**1. What is your position in your organization?****2. Please include your demographic information**

Name:	<input type="text"/>
Company:	<input type="text"/>
Address:	<input type="text"/>
Address 2:	<input type="text"/>
City/Town:	<input type="text"/>
State:	<input type="text" value="-- select state --"/>
ZIP:	<input type="text"/>
Country:	<input type="text"/>
Email Address:	<input type="text"/>
Phone Number:	<input type="text"/>

**3. What is your organization's definition of vulnerable population?****4. Which of the following groups does your organization consider to be part of the vulnerable population?**


- |                                   |   |   |
|-----------------------------------|---|---|
| <input type="checkbox"/> Elderly  | <input type="checkbox"/> Homeless               | <input type="checkbox"/> Illegal immigrants         |
| <input type="checkbox"/> Children | <input type="checkbox"/> Single Parent Children | <input type="checkbox"/> Economically Disadvantaged |



**5. List any other categories that your organization considers part of the vulnerable population that were not listed in the previous question.**



**6. What would you consider the 3 most important needs of the vulnerable population?**



**7. What if any are some of the resources that your organization can provide to local jurisdictions during a disaster?**



**8. Has your organization ever conducted any type of survey to determine if the needs of the vulnerable population are being met?**

- ☐ Yes
- ☐ No

**9. Does your organization utilize any type of software to track the location of vulnerable populations?**

- ☐ Yes
- ☐ No

**10. Does your organization utilize a special needs registry for the vulnerable population?**

☐ Yes

☐ No

**11. How would you rate your organization's ability to deal with the vulnerable population during an emergency?**

☐ Above Average

☐ Average

☐ Below Average

**12. Does your organization provide information regarding emergency preparation for the vulnerable populations in alternative formats such as brail, various languages etc.?**

☐ Yes

☐ No

**13. Has your organization included representatives from vulnerable population groups in disaster planning sessions?**

☐ Yes

☐ No

**14. Has your organization included representatives from vulnerable population groups in training sessions?**

☐ Yes

☐ No

**15. Does your organization work with nursing homes and/or skilled nursing facilities to develop evacuation plans?**

- ☐ Yes
- ☐ No

**16. How would you rate your organization's ability to provide for the needs of the vulnerable population in a post disaster situation?**

- ☐ Above Average
- ☐ Average
- ☐ Below Average

**17. Does your organization track and know the number and location of nursing homes in your jurisdiction?**

- ☐ Yes
- ☐ No

**18. Does your organization track and know the number and location of special needs patients in your jurisdiction?**

- ☐ Yes
- ☐ No

**19. Does your department's current disaster plan include considerations for dealing with the vulnerable population?**

- ☐ Yes
- ☐ No

## APPENDIX F

## NATIONAL EM VULNERABLE POPULATION SURVEY RESULTS

**1.What is your position in your organization?**

- |     |  |
|-----|--|
| 1.  | Planner  |
| 2.  | Management Analyst Supervisor, Plans Branch, Operations Division |
| 3.  | Training manager   |
| 4.  | Executive Administration Officer                                 |
| 5.  | Planner  |
| 6.  | Regional Outreach Specialist                                     |
| 7.  | Statewide Disability Coordinator for Emergency Management        |
| 8.  | Human Services Branch Director during EOC activation             |
| 9.  | Director   |
| 10. | Disaster Preparedness Program Representative                     |

**Response  
Count**

11  
*answered question 11*  
*skipped question 2*

**2. Please include your demographic information**

**Name: 100.0% 11**

- |    |                 |
|----|-----------------|
| 1. | Tracey Epps     |
| 2. | Chas Keeley     |
| 3. | Robyn           |
| 4. | DONNIE K. SMITH |
| 5. | Danielle Dracy  |
| 6. | Christine Brown |

7. Division of Emergency Management

---

8. Renard "Rey" Thompson

9. Millicent West

---

10. Tom Rinaldi

**Company: 100.0% 11**

1. Iowa Homeland Security & Emergency Management Division

---

2. Ohio EMA

---

3. Colorado Division of Emergency Mgt

---

4. TEMA

---

5. South Dakota Office of Emergency Management

---

6. Vermont Emergency Management

---

7. State of Florida

---

8. Utah Division of Homeland Security

---

9. DC Homeland Security & Emergency Management Agency

10. NYS Office of Emergency Management

**Address: 100.0% 11**

1. 7105 NW 70th Ave.

---

2. 2655 West Dublin-Granville Road

---

3. 9195 E. Mineral Ave #200

---

4. 3041 Sidco Drive

---

5. 118 W Capitol Ave

---

6. 103 South Main Street

---

7. 2555 Shumard Oak Blvd

---

8. Rm. 1110, State Office Bldg.

---

9. 2720 Martin Luther King Jr., Ave

---

10. 1220 Washington Ave

Address 2: 27.3% 3  
**City/Town: 100.0% 11**

1. Johnston
2. Columbus
3. Centennial
4. NASHVILLE
5. Pierre
6. Waterbury
7. Tallahassee
8. Salt Lake City
9. Washington
10. Albany

**State: 100.0% 11**

1. IA
2. OH
3. CO
4. TN
5. SD
6. VT
7. FL
8. UT
9. DC
10. NY

**ZIP: 100.0% 11**

- |     |            |
|-----|------------|
| 1.  | 50131      |
| 2.  | 43235-2206 |
| 3.  | 80112      |
| 4.  | 37204-1502 |
| 5.  | 57501      |
| 6.  | 05671      |
| 7.  | 32399      |
| 8.  | 84114      |
| 9.  | 20032      |
| 10. | 12226      |

**Country: 100.0% 11****Email Address: 100.0% 11**

- |     |                              |
|-----|------------------------------|
| 1.  | epps.tracey@iowa.gov         |
| 2.  | crkeeley@dps.state.oh.us     |
| 3.  | robyn.knappe@state.co.us     |
| 4.  | dsmith@tnema.org             |
| 5.  | danielle.dracy@state.sd.us   |
| 6.  | brownc@dps.state.vt.us       |
| 7.  | chip.wilson@em.myflorida.com |
| 8.  | reythompson@utah.gov         |
| 9.  | millicent.west@dc.gov        |
| 10. | tom.rinaldi@semo.state.ny.us |

**Phone Number: 100.0% 11**

- |    |              |              |
|----|--------------|--------------|
| 1. | 515-725-3231 | 515-725-3231 |
| 2. | 614.799.3655 | 614.799.3655 |

3.	720-852-6617	720-852-6617
4.	615-741-1453	615-741-1453
5.	605-773-3231	605-773-3231
6.	800-347-0488	800-347-0488
7.	850-413-9892	850-413-9892
8.	801.538.3349	801.538.3349
9.	202-727-6161	202-727-6161
10.	518-292-2250	518-292-2250

**answered question 11**

**skipped question 2**

2 of 7

### 3.What is your organization's definition of vulnerable population?

1. Any individual, group or community whose circumstances create barriers to obtaining or understanding information, or the ability to react as the general population has been requested to proceed during all phases of emergency management. Circumstances that may create barriers include, but are not limited to: age, physical, mental, emotional or cognitive status, cultural, ethnic, religion, language, citizenship or socio-economic status.
2. People with disabilities, people with serious mental illness, minority groups, non-English speakers, children, the elderly, single working parents, people without vehicles, people with special dietary needs, pregnant women, abandoned children, prisoners, institutionalized persons, people who are homeless, the morbidly obese, people on kidney dialysis, people living in zero-vehicle households, residents of nursing homes, hospitals/wards, hospices, schools for the handicapped, correctional institutions, state prisons, and halfway house populations.
3. FEMA definition
4. Persons who cannot proactively protect themselves.
5. "Vulnerable population" is not a term used by our office as all citizens are vulnerable to disaster. I surmise the population you are asking about is what we refer to as "special needs." The special needs population includes individuals who require special assistance for disabilities that may be medical, mental, or psychological.
6. Individuals who may need special assistance in the event of an emergency.
7. Those whose needs may not be met by general emergency planning. These include; elderly, disabled, non-English speaking, homeless, and others
8. For general purposes, disabilities are grouped as follows: Sensory Disabilities, Physical Disabilities, Mental Disabilities, Self Care Disabilities, Go out on own Disabilities (16 or older), Work Related Disabilities (16-64 years)
9. Persons/people who are in need of special assistance should an emergency/disaster occur



10. Those individuals who may need assistance with medical care and/or personal care during an evacuation and sheltering due to physical, emotional, or mental impairments or disabilities. Individuals who may need a level of care that goes beyond the basic first aid care available at public shelters but below in-patient care.

**Response  
Count**

11

*answered question 11*

*skipped question 2*

**4. Which of the following groups does your organization consider to be part of the vulnerable population?**

Elderly 100.0% 11

Children 81.8% 9

Homeless 54.5% 6

Single Parent Children 27.3% 3

Illegal immigrants 36.4% 4

Economically Disadvantaged 63.6% 7

*answered question 11*

*skipped question 2*

**5. List any other categories that your organization considers part of the vulnerable population that were not listed in the previous question.**

1. See #3

- 
2. People with disabilities, people with serious mental illness, minority groups, non-English speakers, single working parents, people without vehicles, people with special dietary needs, pregnant women, abandoned children, prisoners, institutionalized persons, the morbidly obese, people on kidney dialysis, people living in zero-vehicle households, residents of nursing homes, hospitals/wards, hospices, schools for the handicapped, correctional institutions, state prisons, and halfway house populations.

- 
3. Physically and Mentally Disabled

- 
4. Persons in institutions (prisons, hospitals, nursing homes, mental facilities, schools, etc.)

- 
5. Our definition of special needs includes people who are visually impaired, mobility impaired, hearing impaired, non-English speaking persons, people without vehicles, people with special dietary needs or medical conditions, and people with intellectual disabilities or mental illness.

- 
6. Those with special health concerns (i.e. home health care: on life support, immobile due to illness/injury), those who do not speak English fluently, people with pets.

- 
7. Disabled

- 
8. Persons with mental or physical disabilities
-

9. Those with physical, emotional or mental impairments or disabilities.

**Response**

**Count**

9

*answered question 9*

*skipped question 4*

3 of 7

4

## 6. What would you consider the 3 most important needs of the vulnerable population?

1. Feeling comfortable with their surroundings and what's happening during a disaster. Understanding happening to them and what needs to be done during a disaster. How to recover from a disaster.

---

2. The 5 most important needs are Functional Independence needs, Communication needs, Supervision needs, Medical needs, and Transportation needs.

---

3. Information  
Transportation  
Resources to Recover

---

4. Physical protection from hazards  
Basic needs (food, water, medical)  
Shelter (if current one is no longer satisfactory)

---

5. The most important needs of any population are the basic physiological needs: food, water, air, etc.

---

6. Communication with community (media and external communication devices);  
Evacuation assistance

---

7. Transportation, sheltering, trust in governmental entities

---

8. Communication with vulnerable population, transportation, continuation of services

---

9. Communication  
Continuity  
Quick/equitable response

---

10. Shelter, food, professional intervention and care.

**Response**

**Count**

11

*answered question 11*

*skipped question 2*

## 7. What if any are some of the resources that your organization can provide to local jurisdictions during a disaster?

1. We are the coordinating agency for the State of Iowa. We coordinate resources within the State We do however, sit on the Iowa Disaster Human Resource Council, the State's citizen corps, which helps fulfill unmet needs. This council is made up of government agencies, private, non-profit and faith-based organizations.

---

2. ESF-6 Agencies (1) Provide guidance and support to local jurisdictions regarding the provision of medical and other support services to persons with functional needs that will require special services and considerations in a sheltering or evacuation situation, while maintaining family unity, (2) Provide guidance and support to local jurisdictions regarding the provision of services to institutionalized populations that need special considerations in sheltering and evacuation situations, including security, special housing needs, and other special needs, and (3) Work with ESF-8 agencies, local hospitals and local health treatment facilities to manage the set-aside of hospital beds and other resources during an emergency, and to identify resources to be able to respond to the requirements of those who seek emergency shelter and depend on mechanical medical devices to maintain life.

---

3. Depends on declaration

---

4. Coordination of assistance from external sources (full gamut)

---

5. Our organization can provide a great number of resources to local jurisdictions during a disaster. Some of these resources include incident management assistance, heavy machinery, transportation support, communications equipment and support, sheltering and medical supplies, personnel, law enforcement support, etc.

---

6. Coordination for road crews to assist in maintaining state roads;  
Coordination for CERT members to provide EOC or shelter support

---

7. Planning for and information on addressing the needs of this population

---

8. direction & control and support to overwhelmed jurisdictions, assistance in supplying medical support, provide information about and support to housing/shelter, health care augmentation, collaborate with disability organizations,

---

9. Human resources  
Mass care needs  
food and water  
clothing  
hotel accommodations  
planning  
coordination

---

10. We provide local governments access to State agency capabilities and resources in the areas of public health, mental health, agencies on aging, advocates for persons with disabilities, assistance to the developmentally disabled, special services provided by the State Education department, temporary and disability assistance and other associated services.

**Response  
Count**

11

***answered question 11  
skipped question 2***

**8. Has your organization ever conducted any type of survey to determine if the needs of the vulnerable population are being met?**

Yes 36.4% 4

No 63.6% 7

*answered question 11*

*skipped question 2*

5 of 7

**9. Does your organization utilize any type of software to track the location of vulnerable populations?**

Yes 18.2% 2

No 81.8% 9

*answered question 11*

*skipped question 2*

**10. Does your organization utilize a special needs registry for the vulnerable population?**

Yes 27.3% 3

No 72.7% 8

*answered question 11*

*skipped question 2*

**11. How would you rate your organization's ability to deal with the vulnerable population during an emergency?**

Above Average 27.3% 3

Average 72.7% 8

Below Average 0.0% 0

*answered question 11*

*skipped question 2*

6 of 7

**12. Does your organization provide information regarding emergency preparation for the vulnerable populations in alternative formats such as brail, various languages etc.?**

Yes 54.5% 6

No 45.5% 5

*answered question 11*

*skipped question 2*

**13. Has your organization included representatives from vulnerable population groups in disaster planning sessions?**

Yes 90.9% 10

No 9.1% 1

*answered question 11*

*skipped question 2*

**14. Has your organization included representatives from vulnerable population groups in training sessions?**

Yes 100.0% 11

No 0.0% 0

*answered question 11*

*skipped question 2*

7 of 7

**15. Does your organization work with nursing homes and/or skilled nursing facilities to develop evacuation plans?**

Yes 45.5% 5

No 54.5% 6

*answered question 11*

*skipped question 2*

**16. How would you rate your organization's ability to provide for the needs of the vulnerable population in a post disaster situation?**

Above Average 18.2% 2

Average 81.8% 9

Below Average 0.0% 0

*answered question 11*

*skipped question 2*

**17. Does your organization track and know the number and location of nursing homes in your jurisdiction?**

Yes 45.5% 5

No 54.5% 6

*answered question 11*

*skipped question 2*

8 of 7

**18. Does your organization track and know the number and location of special needs patients in your jurisdiction?**

Yes 18.2% 2

No 81.8% 9

*answered question 11*

*skipped question 2*

**19. Does your department's current disaster plan include considerations for dealing with the vulnerable population?**

Yes 100.0% 11

No 0.0% 0

*answered question 11*

*skipped question 2*

## **APPENDIX G**

### **NATIONAL FIRE DEPARTMENT VULNERABLE POPULATION SURVEY**

**1. Does your department or organization have policies or procedures in place for dealing with the vulnerable population in your area during a disaster?**

- ☐ Yes  
☐ No

**2. Does your organization or department have a specific definition it uses for categorizing or defining the vulnerable population in your area?**

- ☐ Yes  
☐ No

**3. Which of the following, if any, does your department or organization consider part of the Vulnerable Populations?**

- |   |   |
|---|---|
| <input type="checkbox"/> Elderly                | <input type="checkbox"/> Homeless                       |
| <input type="checkbox"/> Medically Disabled     | <input type="checkbox"/> The economically disadvantaged |
| <input type="checkbox"/> Illegal Immigrants     | <input type="checkbox"/> All of the above               |
| <input type="checkbox"/> Single parent children | <input type="checkbox"/> None of the above              |

**4. Does your organization or department utilize any type of software to track the locations of vulnerable populations in your area?**

- ☐ Yes  
☐ No

**5. Does your department or organization work with nursing homes and/or skilled nursing facilities in your jurisdiction to develop emergency evacuation plans?**

- ☐ Yes  
☐ No

**6. Does your organization or department use GIS to plot or track vulnerable populations?**

- ☐ Yes
- ☐ No

**7. How would you rate your organization's ability to provide for the needs of the vulnerable population in a post disaster situation?**

- ☐ Above average
- ☐ Average
- ☐ Below Average

**8. Has your department ever conducted any type of survey to evaluate the special needs of the vulnerable population in your community?**

- ☐ Yes
- ☐ No

**9. Does your organization or department know the number and locations of nursing homes in your jurisdiction?**

- ☐ Yes
- ☐ No

**10. Does your organization or department know the number and locations of the medically disabled in your jurisdiction?**

- ☐ Yes
- ☐ No

**11. Does your department or organization involve representatives from special needs groups in disaster planning sessions?**

- ☐ Yes
- ☐ No



**12. Has your department or organization provided any training to its personnel dealing with the special needs of the vulnerable population during a disaster?**

☐ Yes

☐ No

**13. Has your organization conducted any training scenarios involving special needs population?**

☐ Yes

☐ No

**14. Do you believe that your department or organization is aware of any resources available to them for use in dealing with the vulnerable population from state or federal authorities?**

☐ Yes

☐ No

**15. Does your department's current disaster plan include plans for dealing with the vulnerable population?**

☐ Yes

☐ No

**16. Please list the top 3 things your organization or department does to deal with the vulnerable population during a disaster.**

1.
2.
3.

**17. Thank you for taking the time to complete this survey. Please provide the contact information required in the event that an evaluator would like to contact you to verify your participation.**

Name:

Company:

Address:

<b>Address 2:</b>	<input type="text"/>
<b>City/Town:</b>	<input type="text"/>
<b>State:</b>	<input type="text" value="-- select state --"/> ▼
<b>ZIP:</b>	<input type="text"/>
<b>Country:</b>	<input type="text"/>
<b>Email Address:</b>	<input type="text"/>
<b>Phone Number:</b>	<input type="text"/>

## APPENDIX H

### NATIONAL FIRE DEPARTMENT VULNERABLE POPULATION SURVEY RESULTS

#### 1. Does your department or organization have policies or procedures in place for dealing with the vulnerable population in your area during a disaster?

Yes 36.6% 60

No 63.4% 104

*answered question 164  
skipped question 0*

#### 2. Does your organization or department have a specific definition it uses for categorizing or defining the vulnerable population in your area?

Yes 30.9% 50

No 69.1% 112

*answered question 162  
skipped question 2*

#### 3. Which of the following, if any, does your department or organization consider part of the Vulnerable Populations?

Elderly -----65.4% 100

Medically Disabled----- 60.8% 93

Illegal Immigrants----- 2.0% 3

Single parent children----- 3.3% 5

Homeless -----24.2% 37

The economically disadvantaged----- 14.4% 22

All of the above----- 14.4% 22

None of the above----- 17.6% 27

*answered question 153  
skipped question 11*

**4. Does your organization or department utilize any type of software to track the locations of vulnerable populations in your area?**

Yes 17.1% 28  
No 82.9% 136

*answered question 164*  
*skipped question 0*

**5. Does your department or organization work with nursing homes and/or skilled nursing facilities in your jurisdiction to develop emergency evacuation plans?**

Yes 64.2% 104  
No 35.8% 58

*answered question 162*  
*skipped question 2*

**6. Does your organization or department use GIS to plot or track vulnerable populations?**

Yes 18.6% 30  
No 81.4% 131

*answered question 161*  
*skipped question 3*

**7. How would you rate your organization's ability to provide for the needs of the vulnerable population in a post disaster situation?**

Above average 6.8% 11  
Average 50.0% 81  
Below Average 43.2% 70

*answered question 162*  
*skipped question 2*

**8. Has your department ever conducted any type of survey to evaluate the special needs of the vulnerable population in your community?**

Yes 21.5% 34  
No 78.5% 124

*answered question 158*  
*skipped question 6*

**9. Does your organization or department know the number and locations of nursing homes in your jurisdiction?**

Yes 95.7% 154

No 4.3% 7

*answered question 161*

*skipped question 3*

**10. Does your organization or department know the number and locations of the medically disabled in your jurisdiction?**

Yes 33.7% 55

No 66.3% 108

*answered question 163*

*skipped question 1*

**11. Does your department or organization involve representatives from special needs groups in disaster planning sessions?**

Yes 35.2% 57

No 64.8% 105

*answered question 162*

*skipped question 2*

**12. Has your department or organization provided any training to its personnel dealing with the special needs of the vulnerable population during a disaster?**

Yes 36.8% 60

No 63.2% 103

*answered question 163*

*skipped question 1*

**13. Has your organization conducted any training scenarios involving special needs population?**

Yes 31.9% 52

No 68.1% 111

*answered question 163*

*skipped question 1*

**14. Do you believe that your department or organization is aware of any resources available to them for use in dealing with the vulnerable population from state or federal authorities?**

Yes 54.4% 86

No 45.6% 72

*answered question 158*

*skipped question 6*

**15. Does your department's current disaster plan include plans for dealing with the vulnerable population?**

Yes 52.5% 85

No 47.5% 77

*answered question 162*

*skipped question 2*

**16. Please list the top 3 things your organization or department does to deal with the vulnerable population during a disaster.**

**1. 100.0% 116**

1. provides shelter

2. Recognize potential

3. Send targeted messages to identified vulnerable individual and families

4. Coordination

5. EOP puts Social Services as lead in Mass Care

6. Early warning through news sources as well as door to door visits.

7. Special needs shelters

8. Relocation

9. communicate

10. Collect them at predetermined points around the city

11. Assess the threat to the facilities

12. Developing plans and policies to address the needs of special needs populations during emergencies/disasters

13.	Accountability
14.	Provide food and water
15.	Liaison with Con Homes and /or group homes
16.	Nothing
17.	Work with community
18.	only what we do for everyone
19.	Identify who the vulnerable population is prior to disaster
20.	provide information to populations needing additional assistance
21.	Review Fire Escape Plans
22.	evacuation plans
23.	shelter
24.	contact
25.	HELP EVACUATE
26.	Collaborative planning with nursing home personnel
27.	We really don't have anything that we do other than react to the situation.
28.	Train on emergency evacuations
29.	Shelter staffed with stand-by paramedics
30.	prefire plan
31.	Medications
32.	N/A
33.	EOC Coordination with community agencies
34.	evacuations
35.	Shelter-in-place
36.	Assist as requested from King County Public Health
37.	Ask for special resources from County

38. Provide EMS at special needs shelter
39. Develop evacuation plans
40. Medical support
41. Heat related programs for the Homeless
42. Special Needs Registry - Online
43. Evacuation Location
44. No special plan
45. educate/inform
46. Depend of assistance
47. rescue
48. rescue
49. Identify population
50. Assess the structures
51. Coordinates with local organizations that can assist
52. Shelters
53. Provide temporary shelter & electricity at the station
54. Identified target groups (nursing/assisted living locations, etc)
55. N/A
56. We are lacking and need to address this subject
57. Specific Shelter/ Red Cross Location
58. Maintains database with special needs citizens
59. locate
60. n'a
61. Identify location of
62. Opening special needs shelters



63. Identify the at risk communities
64. Provide information
65. Work with agencies that champion support for these populations
66. Participate in Regional drill for identifying vulnerable populations.
67. respond if called
68. Sheltering
69. Shelter
70. we don't do anything special for any particular group
71. City emergency Management Dept and Health& Human Services Dept represent special needs populations
72. Get them to a shelter
73. inspections
74. Our Emergency Services Department involves special needs groups in disaster discussions
75. Keep updated files on all special needs citizens
76. evac
77. Planning, working with local Disability Advisory Council
78. Alert medical facilities of an impending event.
79. Pre-Registration of individual
80. Provide transportation
81. check on the elderly
82. pre-incident education
83. Opens shelters
84. evac and safe havens
85. Provide shelter
86. Safety
87. Provides emergency shelters

88. we have established address of vulnerable individuals
89. On-going evacuation exercises
90. Identify alternative shelters
91. Emergency plans
92. Provide sheltering services for whoever needs it
93. Nursing Facilities
94. Very small community, we know the people who are vulnerable
95. Evacuate
96. Identify
97. involve senior service immediately
98. Contact to make sure that they are aware of approaching hazard
99. Special Needs Shelter
100. Identify location where disabled personnel live
101. CERT teams are organized and responsible for special needs support
102. Door to Door Evacuation notices in English and Spanish
103. understand their unique needs
104. City Emergency Operations Plan (EOP)
105. Access the threats and identify the vulnerabilities that threaten the vulnerable populations
106. Notifications of outside agencies to assist
107. the only thing we have done is to identify the shelters in our area
108. Contact local Red Cross
109. evacuation from structure
110. Transportation
111. Predisaster Communication
112. temporary shelter

113. We have pre-fire planned all nursing homes in our city.
114. Special Needs Locations are denoted on response maps and in some severe instances the addresses are flagged in our dispatch center
115. Public Education
116. dfjfsdaj

2. 84.5% 98

1. staffs shelter with emergency workers
2. Contact potentials
3. Coordinate with senior services center to track, monitor, and report on special needs citizens
4. Communication
5. EMTs and Medics receive training on dealing with elderly (individuals not masses)
6. Ensure that appropriate notification is made to those responsible for responding to the location of vulnerability.
7. Social services works with all registered seniors individually
8. Assistance
9. provide realistic outline that they will be on their own
10. Bring them to central location and tag them for tracking
11. Identify transportation methods
12. Conducting exercises involving emergencies/disasters that require addressing special needs populations
13. Sheltering
14. Assist in relocation
15. Annual inspections
16. Work with Health department
17. provide special needs sheltering
18. make special shelters available
19. Conduct Fire Extinguisher Training

20. regional hospital relocation plan
21. medical aid
22. evacuation
23. ASSIGN UNITS TO ASSIST
24. Special shelters
25. Assisted in preparing a document on Evacuation, Sheltering and Mass Care Plan, for Lyon County NV.
26. Red Cross provides equipment (i.e. oxygen) to provide to evacuees who need this
27. offer shelters
28. Transportation
29. Access Building Inspection Records
30. Evacuation
31. Identify before incident
32. Pre plans for facilities
33. Transportation
34. GIS data from Special Needs Registry
35. Transportation
36. identified on the CAD
37. Utilize county plan
38. relocation
39. relocation
40. Working to ID location
41. Assist in moving to shelters
42. Coordinates with organizations and shelters for special supplies.
43. disaster planning
44. Temporarily supply generators to persons with O2 machines

45. Some contingency planning involving population (evacuation plans, transportation plans)
46. Transportation
47. GIS layer with facilities
48. needs at shelters
49. Identify their special needs
50. Providing transportation to the shelters
51. Work with these communities in preparedness activities
52. Provide food/shelter
53. Coordinate with the Operational Area.
54. Drill to evacuate vulnerable populations.
55. will provide list of resources to assist with planning
56. FOOD
57. provide food and medical assistance
58. Evacuate all special needs in time of disaster
59. transportation
60. Specialized mitigation plans
61. Arrange pre-evacuations if needed
62. Multi-agency Coordination
63. Sets up shelters
64. monitor housing authority properties
65. informal assessment
66. Train staff for fire watch in temp shelters
67. Transport to other medical facilities if required
68. Continued medical care, as needed
69. Provides prescription assistance

70. we know the nature of the vulnerable individuals
71. Public education and outreach
72. Identify the resources for food, water, and other needed facilities
73. Logistics for sheltering
74. Provides limited services specifically designated for vulnerable populations
75. Day Care Centers
76. Each has a KNOX box for their residence and we have discussed plans with family members and our personnel
77. Shelter
78. Educate
79. Police and Fire tend to those most impacted
80. Question their specific plans; shelter in place or evacuate
81. Surge Treatment Center
82. Provide specific training to individual if needed
83. Health & Human Services deal with mental health needs
84. Target areas identified in GIS
85. create plans that are able to deal with these needs
86. Operational Area EOP
87. Maintain communications with vulnerable populations such as the administration of each nursing home
88. Area shelters during or after an event that would compromise their primary residence
89. that can be used in the event of a hazmat or natural disaster
90. Contact Local EMA
91. transportation accommodations
92. Shelter
93. Evacuation
94. food and supplies

95. Same with our group homes
  96. Roads around nursing homes are on primary and secondary snow routes to be kept plowed in snow events
  97. Provide shelter
  98. jsd;fakf;l
3. 71.6% 83
1. liaison for public assistance
  2. Attempt to evacuate potentials
- 
3. Provide information to those identified as being of special needs and public presentations aimed at this type of audience
- 
4. Transportation
- 
5. Routinely in and out of all nursing homes on medical calls
- 
6. Provide for safe sheltering of these populations during the emergency event.
- 
7. Evacuation of mobile homes pre-hurricane
- 
8. Evacuate them out of the city
9. Identify relocation areas
- 
10. Disaster Registry - <http://www.muni.org/Departments/OEM/Prepared/Pages/DisasterRegistry.aspx>
- 
11. Mental Health Screening/Advocacy
- 
12. Provide medical care at shelters
- 
13. Training
- 
14. provide transportation to shelters
- 
15. have staffing aware and ready to assist
- 
16. MMRS regional task force with equipment and pharmacy cache
- 
17. transportation
- 
18. supplies
- 
19. COMMUNICATE WITH LIASON PERSONNEL
-

20.	Special transportation needs
21.	transportation
22.	Personnel
23.	Currently Developing a Community Risk Assessment through accreditation process utilizing GIS. This will help answer the above questions in the affirmative
24.	Identified mass shelters it healthcare capabilities
25.	Identify potential shelters prior to incident
26.	Shelter
27.	NIMS and ICS
28.	Accountability
29.	focus on specific needs
30.	post disaster
31.	post disaster
32.	Working on this program now, so limited info
33.	Assist with Shelter in place
34.	Has all assisted living & nursing homes listed for post-incident assessments.
35.	crisis planning and counseling
36.	Within reason, assist in whatever other ways necessary
37.	Leverage Faith based entities to assist with special needs population
38.	call back employees to assist with this group
39.	Plan relocation with required support
40.	Providing mass emergency notification of an evacuation
41.	liaise with other agencies to ensure a coordinated approach to life safety
42.	Provide for emergency medical needs
43.	Collect this data through the County Emergency Management



44. work with our EOC who is responsible of these issues

---

45. Medical Attention
46. Relocate all special needs after the disaster ends

---

47. sheltering

---

48. Specialized recovery

---

49. During severe storm advise we will not respond/transport low priority calls

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50. Maps location
51. Advises Red Cross
52. check on the infirmed
53. pray that the incident never occurs!
54. Partner with the industry and other state agencies
55. Liaison with local facility management
56. Transportation, was warranted
57. Serves as liaison to social services organizations
58. we know what resources are needed to evacuate the vulnerable individuals
59. working on opt in data base
60. Identify personnel to assist with the special needs of these citizens
61. Public notification
62. Recognizes that we have very limited capacity to deal with vulnerable populations
63. Trailer Parks in low areas
64. We have no nursing homes in our community but we do a case-by-case review for each vulnerable client
65. Monitor Medical Needs
66. Implement
67. insure proper care at evacuation points
68. Question their transportation plans specifically regarding how they plan to transport residents and by what

company.

69. Direct communication with known care facilities.
70. Have agencies who coordinate with other agencies off installation
71. Our FD assembles specialized rescue taskforce(s) to assist evacuations depending upon type of emergency.
72. Plans specific for dealing with vulnerable populations
73. Regular Operational Area Exercises
74. Work with populations on developing evacuation plans because the fire and police do not have the resources to evacuate.
75. Identification of assisted living centers
76. Contact Local Mass Transit Authority
77. Health stabilization
78. Food
79. Shelter
80. Same with our elderly housing
81. Could provide shelter if necessary, but primarily provide education when requested to allow people to be self sufficient to the extent possible
82. Provide medical services
83. anf;dljfa;

***answered question 116***

***skipped question 48***

7 of 7

**17. Thank you for taking the time to complete this survey. Please provide the contact information required in the event that an evaluator would like to contact you to verify your participation.**

Name: 95.8% 114

1. William Rowley

2. Cheryl Nielsen

3. Doctor Chief

4.	Patrick Repman
5.	Dave Bailey
6.	Keith McGee
7.	Frank Vrklan
8.	David Kennedy
9.	Matt Brisbois
10.	Gary M. Savelle
11.	Michael Boyle
12.	Genevieve Maurits
13.	Deputy Chief Donald J Keinz
14.	Ted Patton
15.	Jim Bruce
16.	Mark Klingele
17.	David Whiting
18.	Jeff Deal
19.	George Bessler
20.	Leo Kennedy
21.	Brett Pollock
22.	Michael Brooks
23.	Chris Griffin
24.	Scott Friend
25.	David Danko
26.	Ben Chlapek
27.	Bob Kielty

28.	Don Waldron
29.	Scott Learned
30.	mark callahan
31.	Howard Stephens
32.	Deputy Chief Dave Schmaltz
33.	Mike Senchyna
34.	Carlos Carmona
35.	Wayne Harder
36.	Bud Backer
37.	Pete Webb
38.	Jerome LaMoria
39.	Phil Tiffany
40.	Scott Goodale
41.	Lynn Hancock
42.	Eric Kriwer
43.	Jack Royer
44.	raymond gretz
45.	Jeff Cash
46.	Chuck Goodman
47.	Div Chief Ray Altman
48.	Steve Dirksen
49.	JR Saez
50.	Bart Stinnett
51.	Ray Hasil

- 52. Mike Chandler
- 53. Greg Marlar
- 54. Mark Boynton
- 55. Rick Russell
- 56. John Caussin
- 57. Ben Smith
- 58. scott boyd
- 59. Sal Scarpa
- 60. Henry Paszczuk Asst. Chief (ret.)
- 61. Alan Harris
- 62. Steven Warrington
- 63. Kraig Stovall
- 64. Micheal Despain
- 65. Mike Ballmann
- 66. Mike Spring
- 67. Harry Worley
- 68. Chief Gary Pollpeter
- 69. Darian Williams
- 70. george blackmore
- 71. Jerry Ziller
- 72. Dean Maggos
- 73. Brian Wilbur
- 74. GAry Fisher
- 75. Drew
- 76. Bill Johnson

- 77. Coleman Bushnell
- 78. John R. Waters
- 79. Keith Williams
- 80. Bruce Kroon
- 81. Butch Browning
- 82. Doug Hall
- 83. Willie J. Patrick, Jr.
- 84. John Benson
- 85. Jeff Davidson
- 86. Charles E. Lauss
- 87. Tod Gates
- 88. Spencer Kimura
- 89. Martin deMasi
- 90. Christopher J. Weir MBA EFO
- 91. Curt Kramer
- 92. Edward Brinson
- 93. Martin M. King
- 94. Manuel Soto
- 95. W. David Bunce
- 96. Rob Hancock
- 97. Hank McCarthy
- 98. Denny Heitman
- 99. Don Baker
- 100. David A. Cooler
- 101. chris sproule

102. Dismas Abelman
103. Barry
104. Alan Fletcher
105. Dan Clark
106. Larry Pikora
107. Albert
108. Casey McCaslin
109. Chris Smith
110. david peterson
111. David Easter
112. Larry Coapland
113. Benjamin Barksdale
114. jlsdjflsj jfl;jdaj

**Company: 97.5% 116**

1. Palm Beach County Fire Rescue
2. Pompano Beach Fire Rescue
3. Deerfield Beach Fire Rescue
4. Midland Fire Department
5. Chesterfield Fire & EMS
6. Rocky Mount Fire Department
7. Miramar Fire Rescue
8. El Dorado Hills Fire Department
9. City of Newport Beach Fire Department
10. New Orleans Fire Department
11. Orange County Fire Authority

12.	Muni of Anchorage Office of Emergency Management
13.	City of White Plains Fire Bureau
14.	Pompano Beach Fire Rescue
15.	Rialto Fire Department
16.	Denton Fire Department
17.	Columbus Division of Fire
18.	Garden City fire Department
19.	City of Seminole Fire Rescue
20.	Cranston Fire Dept
21.	West Manatee Fire Rescue
22.	100 Brooke Ave Suite 500
23.	Monroe Fire
24.	City of Pompano Beach
25.	Hollywood Fire Department
26.	Central Jackson County Fire Protection Districts
27.	Battalion Chief
28.	Londonderry Fire Dept.
29.	Fairbanks Fire Department
30.	pompano beach fire rescue
31.	Mokena Fire Protection District
32.	Miami Township Division of Fire/EMS
33.	Vancouver Fire Department
34.	El Paso Fire Department
35.	Leawood Fire Department



36.	Eastside Fire & Rescue
37.	Dothan Fire Department
38.	PGFD
39.	Fort Lupton Fire Protection District
40.	Marysville Fire
41.	Genoa Township Fire Department
42.	Prescott Fire Department
43.	City of Eaton
44.	DC Fire
45.	Cherryville FD
46.	fort lauderdale fire rescue
47.	fort lauderdale fire rescue
48.	Denton Fire Depatment
49.	Boynton Beach Fire Rescue
50.	Sioux Falls Fire Rescue
51.	Orlando Fire Dept.
52.	Blount County EMA/HLS
53.	Pentwater Fire Department
54.	Columbus Fire Rescue
55.	Douglas County Fire District No. 2
56.	Keene Fire Department
57.	Noblesville Fire Department
58.	Fairfax County FRD
59.	Wilson Fire Rescue Services
60.	kingsport fire

61. North Kansas City Fire Department
62. New Britain FD
63. Seminole County Emergency Management
64. Country Fire Authority
65. Englewood Fire Department
66. Fresno Fire Department
67. O'Fallon Fire Protection District
68. Benton County Fire District No. 4
69. Norfolk Fire-Rescue
70. Meridian Township
71. GERMANTOWN FIRE DEPARTMENT
72. Austin fire dept
73. Orange Fire Department
74. La Grange Park Fire Department
75. Ithaca Fire Department
76. Vista FD
77. Petersen
78. Kinston Public Safety
79. Norfolk Fire Department
80. Zephyrhills Fire Rescue
81. Bellevue Fire Department
82. LA State Fire Marshal
83. City of Westminster FD
84. Wilmington Fire Department
85. Boulder Mountain Fire Protection District

86. Mill Valley Fire Department
87. Pekin Fire Department
88. Lynnwood Fire Dept.
89. Glenview Fire Department
90. Payson Fire Department
91. City of Port Orange Department of Fire & Rescue
92. Hampshire FPD
93. Fairview Fire Department
94. West Allis Fire Department
95. City of Orlando Emergency Management
96. Salt River Fire Department
97. Punta Gorda Fire Dept.
98. Longmont Fire Department
99. Charleston AFB Fire Emergency Services
100. North Lincoln Fire & Rescue Dist. #1
101. Hilton Head Island Fire & Rescue
102. Las Vegas fire & rescue
103. Solana Beach Fire Department
104. Burnside
105. Cunningham Fire/Rescue
106. Worthington Fire Dept
107. Hanover Park Fire Dept.
108. Akron Fire Department
109. Allen Fire Dept
110. LaGrange Fire Department

- 111. New Bern Fire Rescue
- 112. Madison Fire Dept
- 113. Danbury Fire Department
- 114. Thornton Fire Department
- 115. Arlington County Fire Dept
- 116. ajdkjf fjs;dfkjs j

Address: 84.0% 100  
Address 2: 8.4% 10  
City/Town: 90.8% 108  
State: 95.8% 114  
ZIP: 88.2% 105  
Country: 79.8% 95  
Email Address: 89.9% 107  
Phone Number: 84.9% 101  
***answered question 119***  
***skipped question 45***

## APPENDIX I

### Interview Questions and Answers with Karen Dickerhoof of Center for Independent Living

Name - Karen Dickerhoof

Organization – Executive Director for The Center for Independent Living

Contact number – 954-722-6400

Bio:

Karen Dickerhoof, Executive Director is a mother of a disabled adult as well as a previous school board member, Karen is involved in all aspects of the disability community. Through advocacy and outreach, she is the soul of the Center, being an essential asset to Broward County. Prior to joining the Center, Karen was elected and served on the Broward County School Board.

1. Is your organization a government funded or a private entity?  
Private – Not for profit, receives funding from USDOE and FDOE.
2. What is your position and what are your responsibilities?  
CILB is an advocacy organization that provides Independent Living Skills training, emergency preparedness plans, and works closely with Broward County EOC.
3. What is your organization's definition of vulnerable population?  
People with a wide range of disabilities that affects one or more daily life functions who require special services to ensure their safety in the event of a disaster, hurricane or pandemic.
4. Do you believe that there are any groups of society that should be included in the vulnerable population definition that are not included, if so which and why?  
Homeless  
HIV
5. What would you say is the major challenge facing organizations trying to provide for the vulnerable population?

Getting the Vulnerable Population Registry into the population  
Community Planning once they get the information

6. Do you believe that the needs of the vulnerable population are being met before, during, and after a disaster and if so how so.

**Before**

- Planning – Rate County effort B
- Preparation – Rate County effort C
- Hardening the property – Rate County effort D
- Planning for Evacuation – Rate County effort B

**During**

- Shelter at home – Rate County effort D
- Mass Shelters – Rate County effort C
- Special Needs Shelters – rate County effort B
- Evacuation out of area – Rate County effort – Incomplete

**After**

- Response – Incomplete
- Recovery - Incomplete

7. What could be done to better prepare the vulnerable population for dealing with a disaster?

Making sure they are properly registered.

Providing disaster preparedness training and disaster kits.

Assisting with a personal plan.

8. What are the top 3 needs of the vulnerable population during a disaster?

Transportation

Communication

Shelter

9. What is the greatest risk that people in the vulnerable population face during a disaster?

Apathy, particularly by responders who are not aware of who they are and what they might need.

Not having a plan in place.

## APPENDIX J

### Interview Questions and Answers with Chip Wilson, Disability

#### Coordinator for State of Florida

Name- Chip Wilson

Organization-State of Florida

Contact number 904-693-9302

Bio- Has been a paraplegic since 1968. Graduated from Jacksonville University with a degree in Sociology. Worked as Probation Officer, and in education. Worked in private business developing business continuity plans. Opened his own consulting company which advised other companies on ADA issues, before moving to current position.

1. Is your organization a government funded or a private entity?  
Funded by the State of Florida
2. What is your position and what are your responsibilities?  
State wide disability coordinator for emergency management. Ensures that people with disabilities in particular and vulnerable populations in general, are included in the emergency management life cycle and planning.
3. What is your organization's definition of vulnerable population?  
Has never seen a codified definition, however a general definition would be one that not only included people with disabilities, it also includes people whose first language is not English, homeless, transportation disadvantaged, and the elderly. The state does not really have one specific codified definition. The definition that most people use is pretty much the same and much of it comes from the State's Vulnerable Population workgroup which Wilson is a participant of.
4. Do you believe that there are any groups of society that should be included in the vulnerable population definition that are not included, if so which and why?  
In Florida he feels that the vulnerable population is pretty inclusive of what needs to be covered.

5. What would you say is the major challenge facing organizations trying to provide for the vulnerable population?

Money and funding, also ensuring that the vulnerable populations that are being served are aware of their rights and responsibilities during an emergency disaster. Ensuring and communicating that people know their personal responsibilities.

6. Do you believe that the needs of the vulnerable population are being met before, during, and after a disaster and if so how so?

Definite maybe. For noticed events such as hurricanes Mr. Wilson was more comfortable that the needs would be met as opposed to something sudden such as a tornado or explosion. There is much more awareness of the vulnerable population issues, however we are not where we should be.

7. What could be done to better prepare the vulnerable population for dealing with a disaster?

There is a lot of effort by both government organization as well as non-government organizations but there is a lot of apathy on the streets from the public, even in the disability world. Everyone thinks it is not going to happen to them. Overcoming the apathy is the biggest hurdle to overcome. In addition people do not trust the government.

8. What are the top 3 needs of the vulnerable population during a disaster?

Clear and effective communications

Safe place to shelter

Adequate transportation

9. What is the greatest risk that people in the vulnerable population face during a disaster?

Could be disaster specific, however in general the greatest risk is that information is not communicated efficiently and timely. Escape routes getting out. If you don't know where to go or how to go you will not be able to evacuate.



## APPENDIX K

### Interview Questions and Answers with Martin Gould from the National Council on Disabilities

Name-Martin Gould

Organization-National Council on Disability

Contact number-202-272-2004

Bio-Has been at the National Council on Disabilities for five years. Currently is the Director of Research and Technology.

1. Is your organization a government funded or a private entity?  
Independent federal agency
2. What is your position and what are your responsibilities?  
Director of Research and Technology.
3. What is your organization's definition of vulnerable population?  
Uses the definition that is used by the Federal government, typically FEMA but other agencies also. They use the definition that is in the National Response Framework.
4. Do you believe that there are any groups of society that should be included in the vulnerable population definition that are not included, if so which and why?  
None that he is aware of.
5. What would you say is the major challenge facing organizations trying to provide for the vulnerable population?  
Resources in general. Awareness of the variation of interventions and best practices that are needed to address the different vulnerable populations.

6. Do you believe that the needs of the vulnerable population are being met before, during, and after a disaster and if so how so?

The research shows that they are not being met.

7. What could be done to better prepare the vulnerable population for dealing with a disaster?

More resources need to be provided to communities that normally do not have a full time person devoted to emergency management and the vulnerable population. The staff that are currently assigned do not have the needed information and knowledge about the best practices that exist for different groups of vulnerable populations.

8. What are the top 3 needs of the vulnerable population during a disaster?

Would depend on many variable within the disaster such as the type of disaster, location etc.

9. What is the greatest risk that people in the vulnerable population face during a disaster?

Being overlooked in all phases.

## APPENDIX L

### Interview Questions and Answers with Ginny Hazen from Broward

#### County Human Services

Name-Ginny Hazen

Organization-Broward County Human Services Department

Contact number-954-298-4987

Bio-Emergency Management Coordinator

1. Is your organization a government funded or a private entity?  
Government funded
2. What is your position and what are your responsibilities?  
Emergency Management Coordinator. Responsible for anything that is disaster related for human services. Responsibilities continue to grow and have become a full time position.
3. What is your organization's definition of vulnerable population?  
Broward County has no specific definition but for vulnerable population but due to a previous ADA lawsuit Broward County has a very inclusive list of segments of the population that they consider vulnerable. Vulnerable is a relative term because of the disaster. An elderly person can become very vulnerable when they lose power to their condo and cannot go up and down the elevator or charge their wheelchair.
4. Do you believe that there are any groups of society that should be included in the vulnerable population definition that are not included, if so which and why?  
Broward County is very inclusive of all segments of the community due to the ADA law suit. There have been many changes as result of the suit from the case due to incidents that happened during Hurricane Wilma. The disability advocates state that Broward County is doing the best of any county in the state and possibly in the country.

5. What would you say is the major challenge facing organizations trying to provide for the vulnerable population?

Resources and funding. Spending 80 percent of your time for 20 percent of the population. 44% of those left behind during Katrina were the disabled and the elderly.

6. Do you believe that the needs of the vulnerable population are being met before, during, and after a disaster and if so how so.

To a degree, not 100 percent. Especially since each individual is different with different needs. We are meeting 30-40 per cent.

7. What could be done to better prepare the vulnerable population for dealing with a disaster?

Better preparation on an individual level when possible

8. What are the top 3 needs of the vulnerable population during a disaster?

Need to be on registry

Need to have supplies ready during a disaster

Have someone to be with during a disaster so they don't have to tuff it out alone.

9. What is the greatest risk that people in the vulnerable population face during a disaster?

Broward County has won an award from the disabled advocates for the information and communication efforts by the County.